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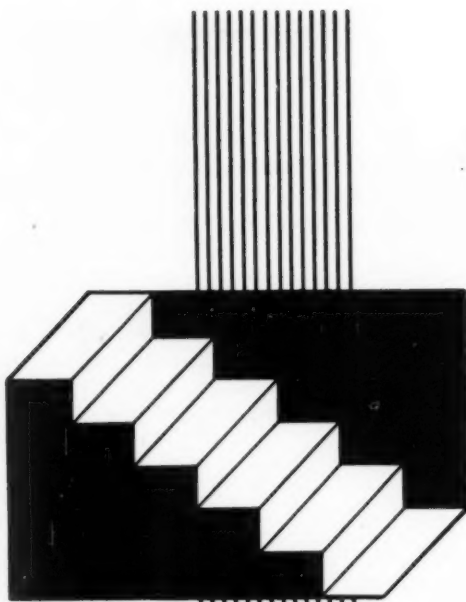
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finish
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*Rotate the page
and see the di-
rection of the
stairway change.*

Is your production going upstairs or down? Depends on the point of view, doesn't it?

Compared with what you could do if you had all the necessary materials, your output is probably disappointing.

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The use of powerful pumps, specially designed nozzles, and proper venting systems combine to make METALWASH machines foremost in modern continuous spray pickling.

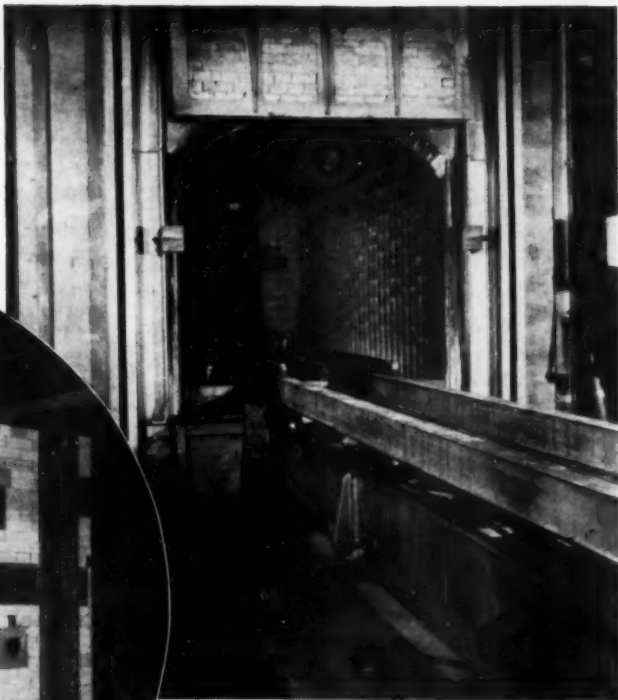
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will start the year right

IT'S THE STANDARD

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You can start the new year right in your enameling plant by checking all of your Rotospray equipment and then checking logical points of use to see if additional time and labor can be saved by adding to the number of units now in use.

This year, as in every year since Rotosprays were first developed, many new installations will be made to insure the proper sieving of porcelain

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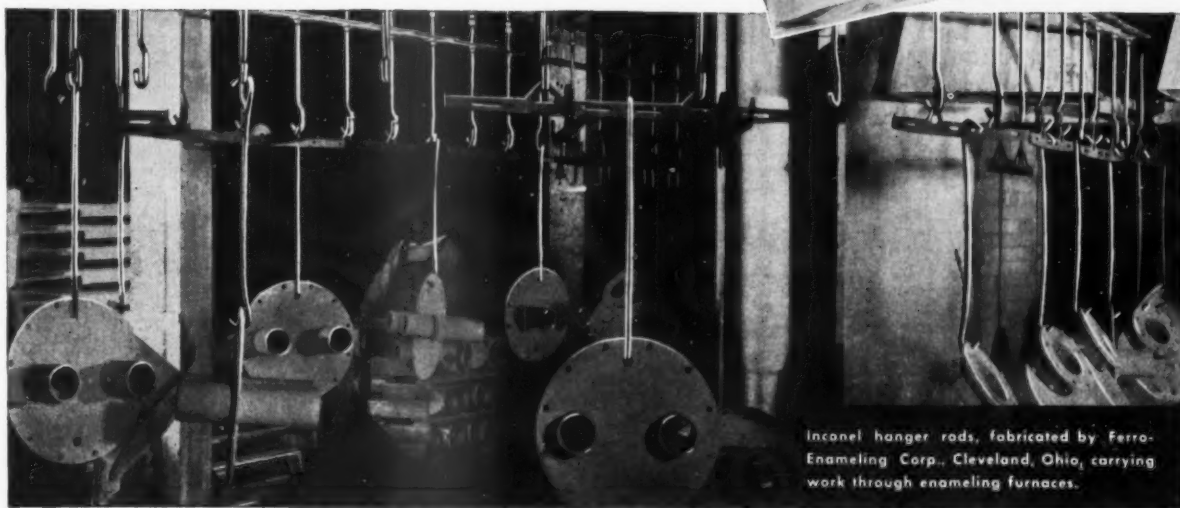
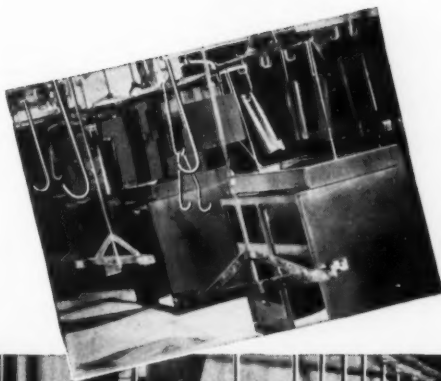
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and cut furnace costs with
INCONEL hanger rods



Inconel hanger rods, fabricated by Ferro-Enameling Corp., Cleveland, Ohio, carrying work through enameling furnaces.

ENAMELERS are finding that wrought *Inconel** hanger rods last longer and do not mar expensive finishes.

Here are four reasons why *Inconel* hanger bars belong in *your* finish-setting furnaces:

1. **Anti-spalling.** Inconel's tightly-adhering oxide resists spalling and it will not flake away to cause "freckles" on costly finishes.
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3. **Strength.** Inconel is well known for its strength and rigidity; will carry heavy pay loads.

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. . .

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(80 NICKEL-14 CHROMIUM)

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A

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The electric cab operated weight collecting car which collects and weighs the raw materials from the hopper storage bins at Pemco is just one of the important steps taken by Pemco to assure you of consistent uniformity.

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BACK AND FORTH! Back and forth! Two thousand pounds each trip! A weight collecting car and its operator cover the equivalent of more than a trip around the world in a year and has covered over a million miles since it has been in operation at the Pemco plant. In no other frit producing plant in the world is production efficiency brought to such a high standard. With this unit thousands of tons of raw materials are measured in correct proportion to the ounce on automatic scales in preparation for Pemco's **WHOLLY CONTINUOUS SMELTERS***—the only wholly continuous smelters in the entire porcelain enameling industry—emphasizing the Pemco slogan of “frit untouched by human hands from raw material to finished product.” It speeds production. It assures uniformity. Costly! Yes, but worth its cost in producing a better product for you.

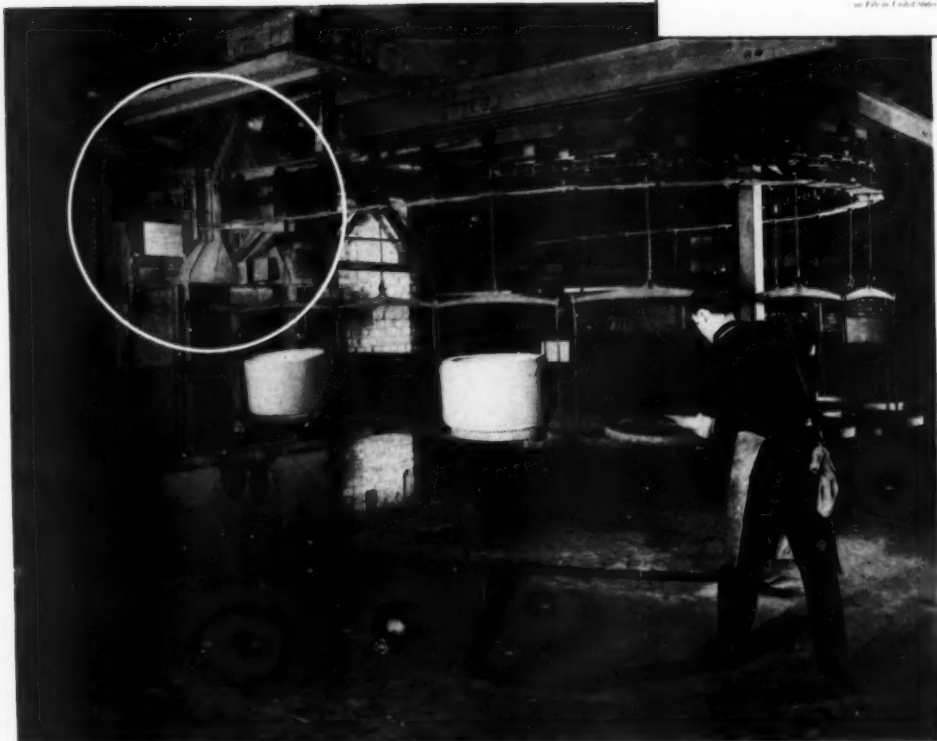
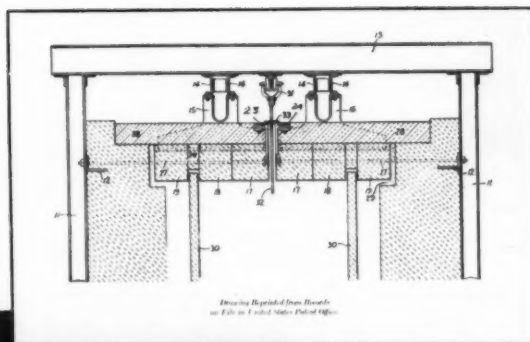
PEMCO CORPORATION

Baltimore 24,  Maryland

Always Begin With a Good Finish

ONLY BOLAND

"Single Flow" Furnaces have "Floating Roof" Construction



↑ THIS REPRODUCTION OF A PATENT DRAWING SHOWS THE PRINCIPLE OF THE "FLOATING ROOF."

← TYPICAL FURNACE INSTALLATION AT INGERSOLL STEEL DIV., BORG-WARNER CORP.

LOOK to the roof when studying the design of your next continuous furnace. Only Boland furnaces have **FLOATING ROOF** construction, and it's patented. (Boland Patent No. 2,156,008.)

This roof, "built like Gibraltar," not only minimizes heat loss, but offers permanent insurance against conveyor distortion. The accompanying sketch shows the design characteristics of the roof which "carries its own weight." It's sturdily built—for long life.

BOLAND FURNACES SAVE FUEL. ASK US FOR THE FACTS ON FUEL COSTS.



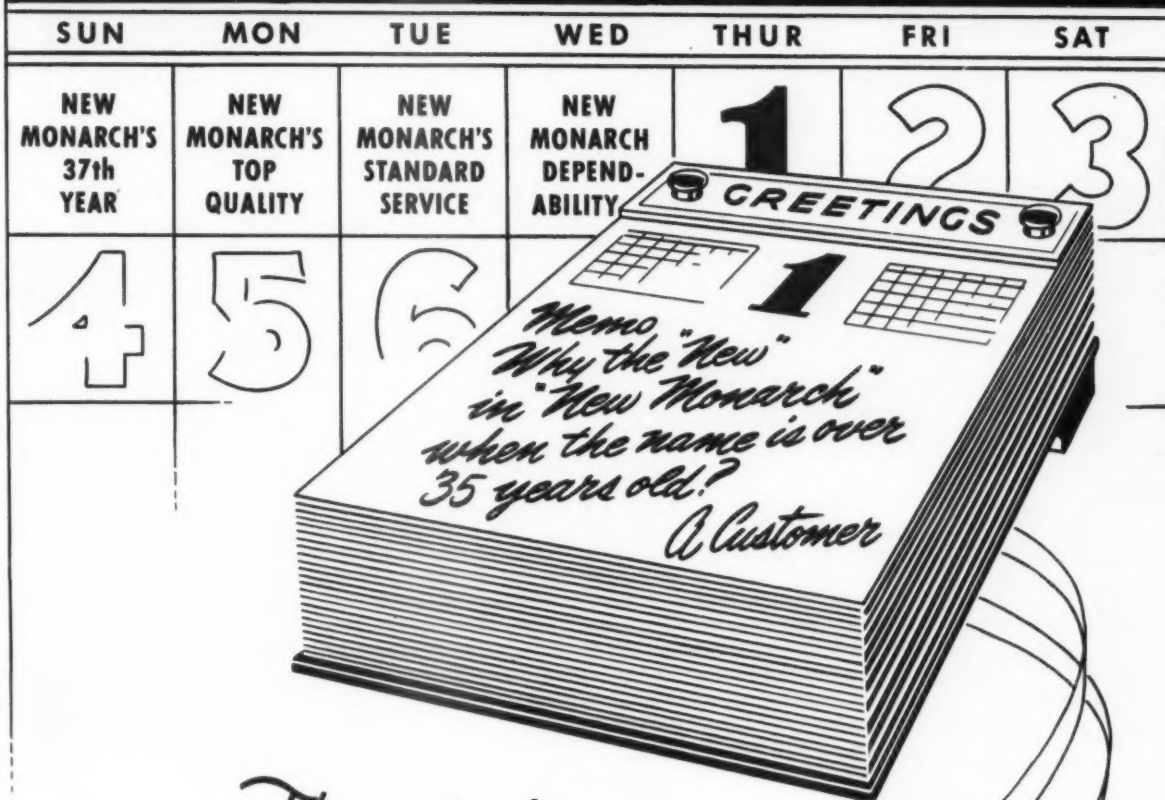
This feature alone may be important enough to you to specify Boland furnaces, but in addition you get the added features of equalized temperature, heavier furnace loads and the elimination of time and labor consuming "furnace conveyor wrecks" in the Boland **STRAIGHT AWAY**—**SINGLE FLOW** continuous furnace.

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Designers and Builders of Continuous and Box Type Enameling Furnaces

1948 JANUARY 1948



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That's a very timely question. The answer is simple. 'Though the world has greeted thousands of New Years, January 1st is still the beginning of a New Year — another 12 months of opportunity and service.

So it is with New Monarch. 'Though we boast of 37 years of loyal service to our many customers, New Monarch is ever looking forward, developing new ideas, applying new skills and new methods, solving new problems, glimpsing new horizons. You'll always find something new going on at New Monarch. Therefore our pride in the name, New Monarch.



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THE Finish Line



A helping hand
AMERICAN OVERSEAS AID AND
UNITED NATIONS APPEAL FOR CHILDREN

AS FINISH STARTS ITS FIFTH YEAR — let's review a few lines from the pages of "The Finish Line" for 1947.

The trend is good for porcelain enamel —

February, 1947

If the signs are accurate, and the future buyer will look for quality first, then price — and demand "reasonable value" before he buys — the result should be entirely favorable to our industry.

Porcelain enamel is synonymous with quality in appliances and other metal products, and increasing thousands of buyers have come to recognize this fact during the "do without new products" years. Many of these buyers now know the one and only finish which can be depended upon for the lifetime of the product.

"Humanics" in industry — March, 1947

Sound treatment of the problem of human relations will take its place as a consideration of number one importance in the successful organizations of the future. A realization of its importance is *starting* to make itself felt; and as its velocity increases, so will a healthier and happier situation for all who form a part of our industrial nation.

Now about counter tops — April, 1947

We've "harped" on this subject before, and we will "harp" on it again until some kitchen-conscious producer with porcelain enameling facilities offers the home owner the ultimate in kitchen work surfaces — a good heavy plywood counter top with a light gauge porcelain enameled work surface veneered to the plywood.

In this suggested surface, the housewife could have everything that she desires. She could have a sound absorbent, colorful, *permanent* work surface that successfully resists heat, acids, scratching and wear. And — *very important* — she could enjoy these advantages without the effort of applying special liquids, waxes, polishes, etc., that are required to hold some semblance of the original appearance on less permanent surfaces.

Do you follow the fire engines? — June, 1947

There are dramatic possibilities in FIRE that are hard to beat. Porcelain enamel is the one *fire-proof* finish — so why shouldn't we capitalize this point?

If we have to build a bonfire in a porcelain enameled house or filling station — sans furniture or equipment of course — to bring this life and property saving feature to the attention of architects, insurance companies and

home owners, let's do it. Properly exploited, such a stunt *could* make the newsreels, newspapers and national magazines. And photographs could be used for endless educational purposes to put this story over.

Half a loaf is better than none — August, 1947

"Half a loaf is better than none" may be considered a hackneyed phrase, but it can be ever so true and fits remarkably well into at least one field for the use of porcelain enamel.

One suggestion we have to offer in this connection is that we open our eyes and minds to the use of a *combination of materials* when and where such a combination will provide a result advantageous to the ultimate purchaser. Some of the most attractive architectural applications of porcelain enamel that we have seen have combined soft, well chosen colors in porcelain enameled metal with the beauty of the bright metals for trim or relief. If, as is entirely possible, the total use for architectural porcelain enamel can be greatly expanded by encouraging the liberal use of other materials in combination, then let's do what we can to encourage a trend in this direction.

Let's talk refrigerators again — November, 1947

In "The Finish Line" for October and November, 1944, we pointed to the deplorable situation in which the porcelain enameling industry lost approximately 50% of the porcelain enameled exteriors in the domestic electric refrigeration field. The subject is just as pertinent today, so we quote the following from the November, 1944, "Finish Line."

"This business was not lost to finishes that we could honestly acknowledge as superior. It was, however, lost to a type of finish that had sufficient merit to make it readily salable. In addition, consistent advertising and progressive selling policies were used in establishing these finishes — both with the manufacturer and the retail sales outlets."

Certainly manufacturers can market all the refrigerators they can produce today, regardless of the finish, but some progressive manufacturers can steal a big piece of a *permanent* future market by offering *soon* what the experienced refrigerator buyer wants — *an all porcelain enameled refrigerator*.

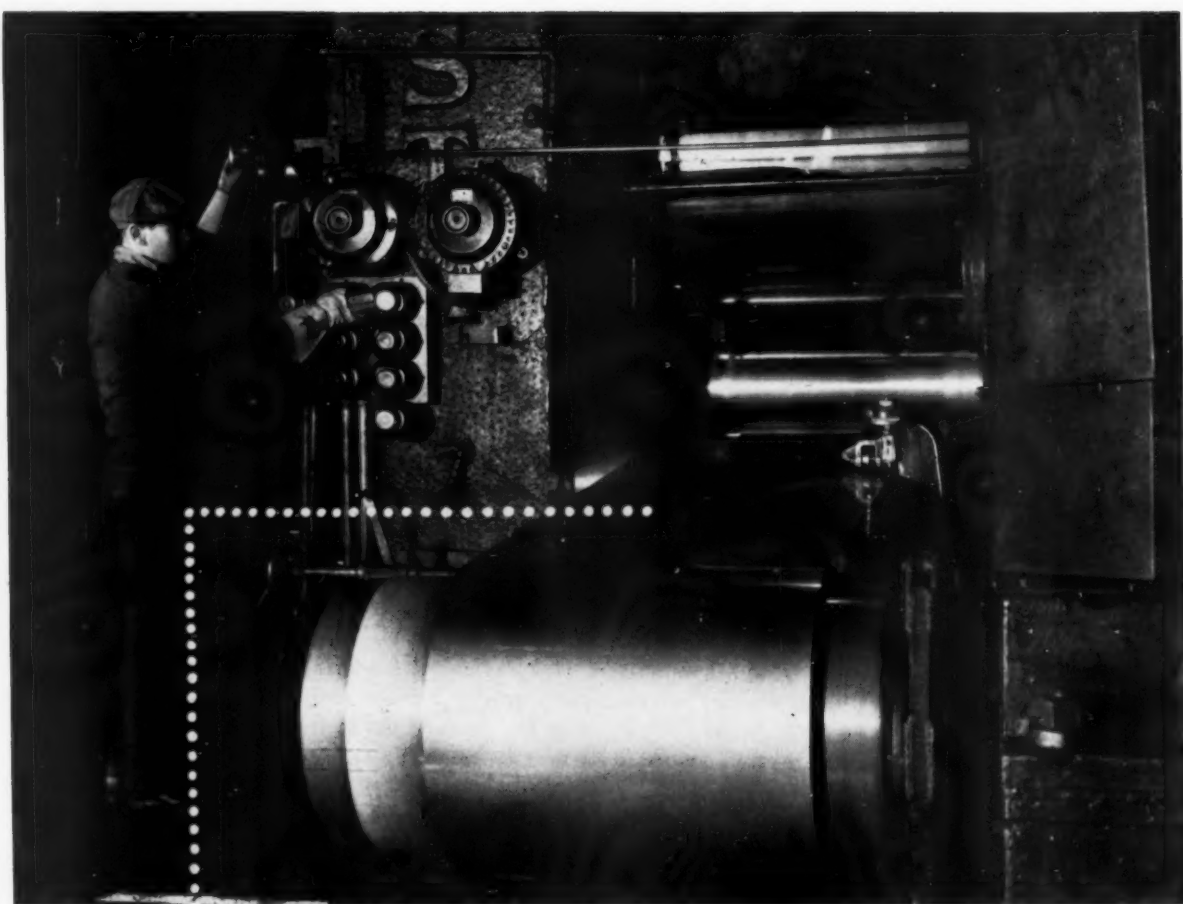
Dana Chase

EDITOR AND PUBLISHER

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You can be sure that Inland Enameling Iron Sheets will meet the requirements for flatness your products may demand. Rigid control assures this. The metal must be up to Inland's uniformly high standards before it leaves the open-hearth furnaces. It must be maintained at Inland's high standards as it is rolled, under constant tension, in modern rolling mills. It is especially processed to keep it free from internal strains. Continuous testing and inspection by experienced Inland metallurgists assure you of a uniformly high quality enameling iron sheet.

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In addition, you can be sure of better enameling results because of the "double-tight" adherence, sag resistance, and correct chemical composition. For full information, write Inland Steel Company, 38 South Dearborn Street, Chicago 3, Illinois.



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Reports to management

practical suggestions for useful reports to management
by financial executives

By Robert W. Bowman • C.P.A., CONTROLLER, NEWARK STOVE COMPANY, NEWARK, OHIO

LISTED below are some of the reports which an accountant can give management besides the P & L statement and the balance sheet.

Analysis of gross profit

The president of X company receives his financial statement and notes that sales are up \$200,000 and gross profits are up only \$2,000. No doubt it disturbs him to note that his profit ratio dropped with these additional sales—sales up, profit ratios down. Why shouldn't the controller analyze this situation in a regular report of operations?

Three things exposed their effect on the earnings—change in selling price, change in cost, and change in volume. The accountant can tell the president dollar-wise exactly the influence of each. With his chart of accounts set up so that he can get sales and cost of sales at standard by products, he can prorate his operating variances to product lines to get actual cost. Then, in three simple steps the accountant can analyze the change in the gross profit as follows:

1. The quantities currently sold times the change in unit sales price equals the change in gross profit due to selling price changes.

2. The quantities currently sold times the change in unit cost equals the change in gross profit due to increase or decrease in cost.

3. The difference in quantities sold times the preceding month's unit gross profit equals the change in gross profit due to the change in sales volume.

These three figures added together will equal the dollar change in gross profit reflected on the president's P & L statement. It's an informative

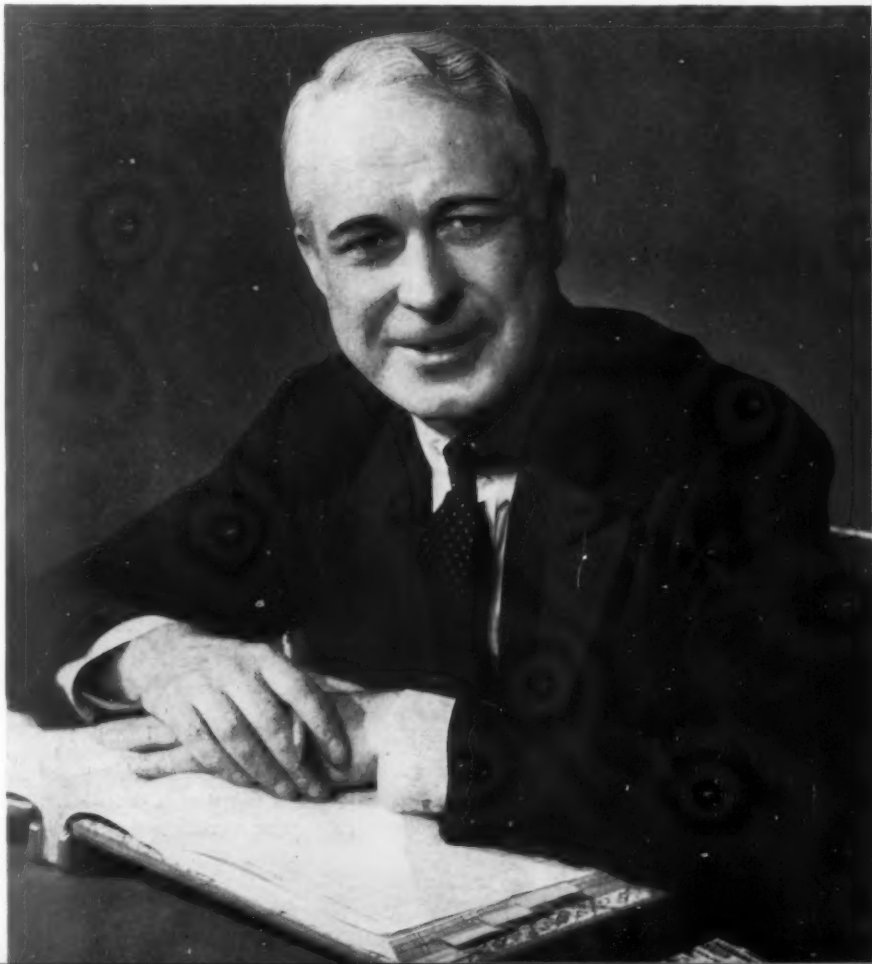
statement that a cost clerk will eventually do for you and thus explain the "Whys" and unknown factors of profit changes in terms of reasons and dollars.

Forecast achievement or current, near future, and distant outlook

Most successful companies are forecast-conscious. Sales, production, and purchase schedules are correlated and converted to a forecast earnings statement. It represents the best

projected thinking of each functional manager's operations. If the resultant forecast is satisfactory, the president or the board puts its stamp of approval on it. After that it's up to each person to do as he had anticipated doing. The top man wants to compare the actual accomplishments against the satisfactory forecast of operations. Two influences must be watched to realize these forecast results. First, sales and production must be sustained on a requirement basis and, secondly, expenses and

"The financial executive is paid to think and formulate constructive plans."



costs must be within the level of predetermined allowances. With regard to the latter—expense controls—every accountant supplies management, in some sort of a form, a comparison of actual expenditures with amounts that it should be or budgeted amounts. Here it might be added that an operating statement issued during the month, either weekly or daily, is much more valuable to operating heads when such statement is current at, say, 85% accurate, than to be 100% correct and balanced out precisely to a control and then issued a week or ten days after the activity occurred.

But equally important to management as the expense control is the sufficiency of sales and production to maintain the needed volume to realize the forecast earnings. Here again the accountant can render a very useful service to management by indicating where the company stands today, sales and production-wise, with relation to the forecast by making *three little calculations*. If the six-months forecast of sales is broken down to a daily basis, by dividing 120 work days into the six months figure, there is then indicated the amount of necessary sales needed each day to accomplish the volume forecast. The accountant would make a three-point statement as follows:

1. *For current outlook:* Units shipped yesterday at billing price, or the net credit to sales, thereby eliminating excise tax, indicates the actual daily sales figure which is compared with one day's forecast sales.

2. *Near future outlook:* Crated production from your assembly line or received into the warehouse, priced and extended at the sales credit level, will indicate salable merchandise generally converted to sales in 10 to 20 days. This also is compared with one day's forecast sales.

3. *Distant outlook:* Compare yesterday's direct labor with the relative direct labor required in one day's forecast sales.

The accountant can then show management that yesterday's sales met the daily forecast requirement, that yesterday's crated or completed units at sales level represented the

requirements of one day's forecast sales, and that the work-in-process measured by direct labor was sufficient to produce the equivalent of one day's forecast sales some time in the next 60 to 90 days.

All profit but no money

Imagine the embarrassment of the president whose company is making a lot of profit but doesn't have money to pay his stockholders a return in the form of a dividend. He may not be able to discount his bills. All he has is a book problem. Where is his company's working capital coming from and what is it being used for? The financial executive of the company can best answer these interrogations if he will submit, with his regular written report and analysis of operations to management, a statement showing the changes in working capital. This statement would take the earnings and add back to it such non-cash charges as depreciation accrual, bad debt accruals, etc. From the funds provided from profits the accountant would indicate then where the funds were used, for such items as capital expenditures of equipment and tools, dividend payments, long-term debt reductions, etc. The excess funds received from profits over the expenditure of funds as aforementioned represents an increase in working capital. Of course, it is realized that the difference between current assets and current liabilities represent working capital, but without this type of statement no one knows the contributing factors of the change in working capital.

For a company that is on an extended expansion program, the financial executive would do well to not only forecast operations and a balance sheet, but also include a fund statement for the period of the projected balance sheet.

It might be well to just touch on a few other points where the accountant can render service to management and the functional department heads.

Material control

With regard to purchases and material, it is not only enough to indicate price variances by the month

but the president and the purchasing officer is also interested in purchase price variance by vendors. This can give the purchasing agent a cue as to the products on which he should seek new quotations. Further, it is helpful to those who receive raw material statements to see an extra column on the report indicating the number of periods supply on hand by the component accounts. This computation is easily arrived at by dividing the usage into the balance on hand. If the accounting department possesses tabulating equipment, one might consider a complete material control procedure. In the final analysis, material is a greater cost factor than direct and indirect labor. Why issue daily and weekly control reports and ignore the best possible control of material?

We invariably get or can obtain unit production figures from our Institute or the Department of Commerce which indicate trends relative to production on our items. The controller or treasurer can go one step further and seek such trends that the department store or consumer level will indicate, which usually reflects trends in advance of production statistics. The Federal Reserve Banks in the 12 districts accumulate data on department store sales and inventories by months on major household appliances. Management might be surprised to know that these departments, i.e., major household appliances, in department stores show greater increases in monthly sales than any other department and, believe it or not, inventories in these stores are about 200% higher than they were last year. These high inventories are important indicators that either negligible stocks existed last year or that the consumer demand is being met at this time. There is a wealth of statistical data in these monthly Federal Reserve reports.

A personnel relations problem

The annual parade of wage demands has become one of the nation's most critical economic problems. Where cost of living indices used to be the tune of the propaganda for wage increases, it has become more

evident that the "ability to pay" is coming into prominence as labor's demand for more. It is going to be up to the accountant to aid management in their endeavor to get employees to understand the figure operations of their company.

Some time ago in Pennsylvania, employees were asked for an estimate of how much they thought the company retained out of a dollar sale. It was surprising to learn the estimates ranged from 80¢ down to 16¢. What a misconception of facts! Should this misconception remain, or should employees be told more about the company financial-wise?

Another group of employees were given their regular financial statements of the company, and five weeks later were asked to circle one of six figures that they thought the company made out of each dollar. The figures ranged from 2¢ to 25¢. After having had the regular financial statement, only 6% designated the right answer.

In giving employees financial data on the company, explain in simple terms, by an extra column alongside the figures for the overall company operation, just what it means per employee. How much sales did each employee produce? Merely divide annual sales by the average number of employees. The cost of that sale then should be broken down by wages to the individual employee, supplies used, etc. Of the residue left after taxes, indicate then how much of that which the employee produced went to the stockholder and how much was retained in the reserve account for a rainy day.

Figure information is always interesting to employees. Last year our company revived our Christmas Savings Club and presented it to the employees on the basis of "here it is—take it if you want it." This year we told employees how much they had saved in the fund and how much it had meant in dollars and cents. This year we have 60% more people participating than in 1947.

The accountant at the labor table

The accountant each day is coming more in prominence at the labor

negotiating table. A quick concession to pay regular time for non-working holidays, in lieu of double time for working, thinking that the company is giving the employee only the extra amount that would have to be paid to work on the holidays, is only part of the company's position to be considered. What about the non-absorption of 10 days' fixed burden, the loss of producing a half million dollars of merchandise and loss of perhaps \$35,000 profits. Ten day's fixed burden might well be \$50,000 unabsorbed. It would take more personnel or overtime to make it up.

The accountant administers the payroll and timekeeping functions and is, without a doubt, closer to the labor dollar than any other operating head. He knows the cost and implications involved in suggested plans of the industrial relations man. The industrial relations head knows the meaning of wage adjustments *to the worker*, but the accountant knows better the meaning *to the company*.

Keep your top man informed as to the amount of production and purchase gains in your period profit. In the accountant's report of operations, he should clearly indicate the three components that make for period earnings, namely: (1) profit on production at less than predetermined standards, (2) profit on sales, i.e., difference between selling price and cost of sales at standards less selling and administrative expenses, and (3) financial income. The three should total to profits before taxes on the P & L statement. Show him whether operations at excessive cost are nibbling into his gross mark-up over standards. On the other hand, he may think all profits are from sales only.

The accountant should keep management "homogeneous" in thinking. Facts presented to them are not always comparable or consistent and should be revised by the accountant. Labor used to talk about profits before taxes during the excess profits tax years but now you see them talking about earnings after taxes. In a recent labor meeting in Cleveland it was pointed out that "steel is mak-

ing exorbitant profits," but when you look at the facts you will note that in 1946 the four largest steel factories earned 7.4% before taxes against 14% in 1941 before taxes—actually dollar-wise their earnings dropped from \$460 million to \$219 million in 1946. Does your management realize that one million dollars in sales in 1947 represents only 600,000 in 1939 dollars—that 3/5ths of your increased sales dollar is represented as inflationary dollars while only 2/5ths represents additional dollars on additional physical units? The cost of living indices supplied by the Bureau of Labor Statistics issued in late November was 66.1% higher than the 1939 level, or 12.3% above a year ago. The accountant can use these cost of living indices to a great many applications in orientating management's thinking to prewar levels.

Pointers for the financial executive

In closing, here are a few observations that the accountant might take cognizance of so that he may place himself higher on the organizational ladder of his company.

1. Lay facts on the table—they may be disagreeable but in the long run the accountant will be better thought of for his unbiased thinking.
2. Never hesitate to make suggestions provided you have the backup figures to support yourself.
3. Present your figures in the operator's talk. Don't underestimate that little black book your foreman carries around, because it has figures in his own language that he keeps because you don't supply them to him.
4. Develop a system of daily control at vital points of operations.
5. Don't get into the detail excessively or push a pencil all day. The financial executive is paid to think and formulate constructive plans—this is his job. Don't let the detail keep you from your work.

This article was adapted for Finish from a paper presented before the Financial Executives and Accountant Group at the Fifteenth Annual Convention of the Institute of Cooking and Heating Appliance Manufacturers.

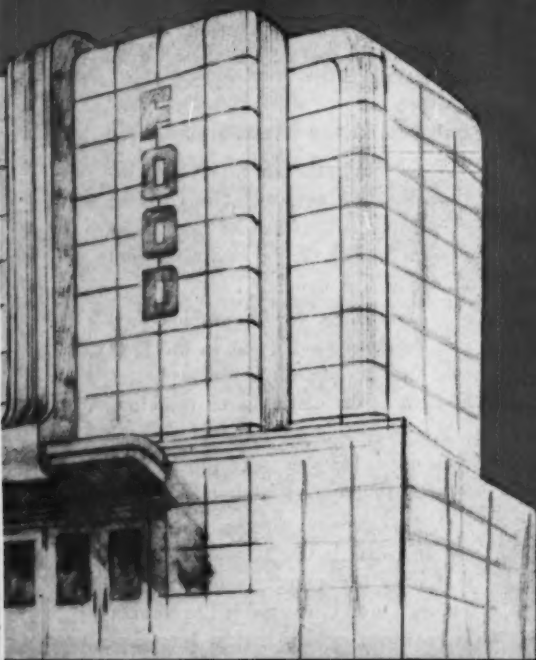
Results of PEI market survey

By Floyd C. Woleslagle

• CARNEGIE-ILLINOIS STEEL CORPORATION;
CHAIRMAN, PEI COMMERCIAL RESEARCH COMMITTEE

DOES STORE FRONT APPEARANCE INFLUENCE YOUR SHOPPING?

70% Answered YES



AFTER careful consideration of the various types of market information that could be developed, the Porcelain Enamel Institute Commercial Research Committee decided to conduct four market surveys. These surveys covered:

1. Restaurant operators—to determine preference for porcelain enamel in restaurant equipment.

2. Grocers—to get their remarks on the service of commercial frozen food cabinets in use.

3. Housewives—to obtain their comments about shopping for porcelain enamel.

4. Vending machine business—to learn about the rapid growth and developments of an industry where there are opportunities for porcelain enamel application.

Survey results

Colored slides were prepared in order to give an adequate presentation of the results of the surveys.

Highlights of the presentation are as follows:

Because the appearance of store fronts tends to influence the shopping of 70% of the housewives, and 66% prefer modernized stores, one may expect \$67,000,000,000 of the annual retail business to flow into retail establishments with modern store fronts where 25,000,000 shoppers prefer to buy.

The owners of stores with conventional-type store fronts, among the

2,000,000 retailers in the United States, open a market for at least 20,000,000 to 40,000,000 square feet of porcelain enamel a year.

While leafing through magazines and local newspapers, 26,500,000 readers noticed porcelain enamel mentioned in advertisements.

When housewives go shopping for sinks, washing machines, table tops, or other kitchen equipment, 60% intend to ask for porcelain enamel.

In the stores, 52% or 26,000 of home appliance salesmen are reported by shoppers to be telling customers about the advantages of porcelain enamel.

When housewives were asked what they wanted first for their kitchens, assuming that they had new stoves and refrigerators, 40% placed modern sinks at the top of the list.

Looking at the market for kitchen ranges, refrigerators, sinks, drain boards, work and breakfast tables, and washing machines, which carry a high consumers' preference for porcelain enamel, it was found that this market adds to 15,000,000 units for the retailer, 445,500,000 square feet of porcelain enamel for the manufacturer, and one unit annually for every other family in the United States.

The sign market

Other interesting information about shopping was developed by "The American Home" Reader-Consumer Panel. As the shoppers rode to the local shopping center in their cities and towns in the United States, they were asked to observe the condition of signs at street car and bus stops, store identification signs, and street markers.

Here is the report of those in good condition:

Gasoline service station signs 86%
Store identification signs...69%
Bus and street car stop signs 61%
Street markers.....54%

This indicates a replacement market for 1,000,000 street markers and 500,000 store identification signs.

Frozen food cabinets

A group of 1,000 independent and

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finish JANUARY • 1948

PORCELAIN ENAMEL preference in the KITCHEN



**Kitchen
Range
90%**

**Kitchen
Work Table
41%**

**Refrigerator
Exterior 87%
Interior 89%**

Why Porcelain Enamel Is Preferred

	Housewives	Grocers	Restaurant Men	Architects	Product Designers
Stays white	76%	74%	60%		19%
Sanitary	82%	56%	73%	27%	
Easy to clean	96%	74%	86%		
Durable	68%	53%	53%	35%	36%
Attractive colors	24%		60%	32%	45%
Won't scratch or corrode	27%		46%		16%
Low cost				32%	20%

HERE IS WHY THEY PREFER PORCELAIN ENAMEL

STAYS WHITE 76%
SANITARY 82%
WON'T SCRATCH 27%



CAA segmented airport marker

utilizes porcelain enamel

IN the testing of the new "segmented circle marker" installed recently at the Congressional Airport in Washington, D. C., porcelain enamel was one of the materials chosen for panel construction for the temporary installation.

Promoted by the Civil Aeronautics Administration, the basic idea of the "Segmented Circle Airport Marker System" is to make it easy for any pilot to orient himself at any airport before making a landing.

With local custom sometimes deviating traffic from the normal left-hand pattern, the terrain of the land dictating the direction of the landing strips, and personal preference direct-

ing the placement of the wind cone, pilots approaching strange fields have lost valuable time figuring out how to land safely in accordance with local practices.

Problem solved

by CAA airport engineer

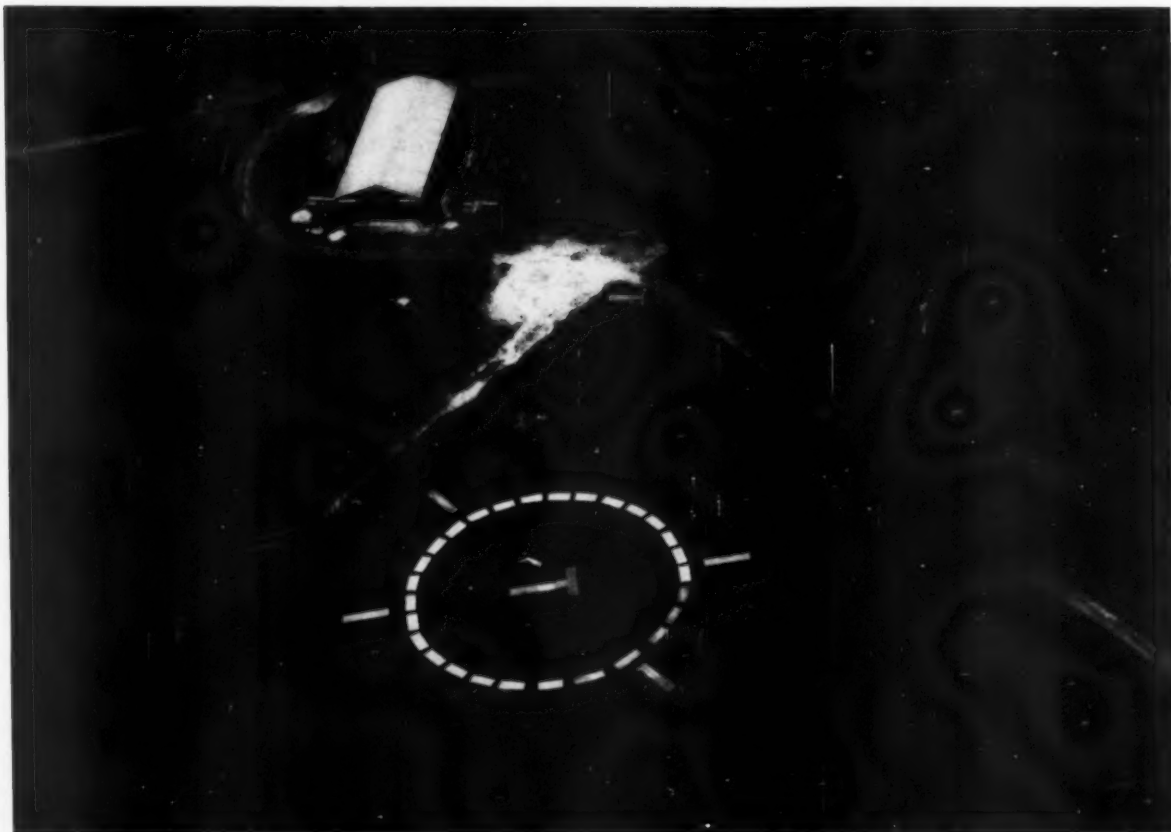
This problem was solved by Clyde Carlstrand, CAA senior airport engineer, who developed the idea of the segmented circle by working with paper cards on his desk, and then with larger paper strips pegged down on airfields with spikes. Then when it came to choosing permanent materials for the panels, weatherproofing, durability, ease of installation, maintenance cost, and visibility from

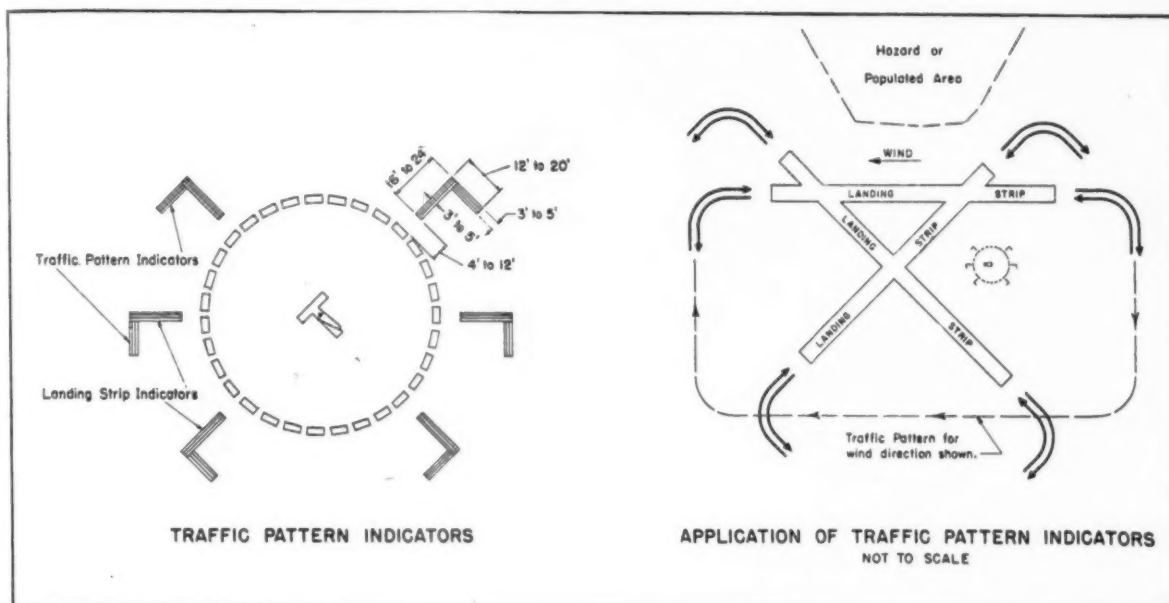
the air had to be considered. Porcelain enamel was selected as one of the materials for the panels in the test marker installed at the Congressional Airport. The white panels, which stand out visibly from the others in the accompanying picture, are porcelain enamel.

The segmented marker system provides for the indication of wind direction, landing direction, landing strips, traffic pattern, and closed field signal, all in one compact easy-to-read unit.

In order to differentiate it from the solid airport circle, intended to be placed in the center of the landing area, the segmented circle is located

This aerial photograph shows the basic installation, together with the landing direction indicator (the "T" at the center), and the landing strip indicators at the Congressional Airport.





Traffic pattern indicators and their applications, as well as diagrams for other installations not shown here, are included in CAA's Airport Engineering Service drawing No. 742.

off the traffic area. Thus it can utilize land unsuitable for landing, taking off and taxiing.

Segmented circle parts

As specified by the CAA Technical Standard Order N5, released July 30, 1947, the types of devices to be used in the segmented circle system are as follows:

Segmented circle, basic element of the system is located off the traffic area. It is segmented so that from a reasonable distance it can be readily distinguished from a solid circle. It performs two functions: (1) aids the pilot in locating obscure airports, and (2) provides a centralized location for such indicators and signal devices as may be required on a particular airport. The circle shall be installed in a position affording visibility to the pilot in the air and on the ground.

Wind direction indicator, a conventional wind cone located in the center of the circle, shall constitute, with the segmented circle, the minimum installation for an operating airport.

Landing direction indicator, when conditions at an airport warrant its use, shall be used to show pilots in the air and on the ground the direction in which landings and take-offs

are to be made. This indicator may be so designed that it can be made "free-swinging" when left unattended.

Landing strip indicators are used to show the orientation of landing strips and/or to give a positive indi-

Editor's Note:

For many months *finish* has been devoting space to the subject of air marking for today's air travelers. In our opinion, porcelain enamel can play a most important part in the national air marking program. We will keep readers advised of new installations as they are made, and we urge that all industry members advance the idea of permanent air markers of porcelain enamel.

This brief description of the segmented airport marker at Washington, D. C., is not presented as comprehensive coverage of the subject. For complete details those interested should contact CAA's airport engineering service, office of airports, Washington 25, D. C.

cation of the strip specified for use by the landing direction indicator, as in the case of landing strips intersecting at very acute angles.

Traffic pattern indicators shall be installed for controlling the direction of the traffic pattern when there is any variation from the normal left-hand pattern.

Closed field signal panels are placed in the center of the circle in the form of a cross to signify that a field is temporarily closed to all traffic. When this signal is used, the wind cone and landing direction indicator shall be removed from the circle.

The purposes of issuing Technical Standing Order N5 was "to transmit the requirements of the Segmented Circle Airport Marker System" and "to establish the requirements as official CAA policy for the guidance of all concerned." Furthermore, the order stated that it "shall govern all the employees of CAA in their recommendations to the public, or in their approval of the use of Federal funds for any item covered by this Standard."

Porcelain enamellers should study CAA marker requirements

Now is the time for firms interested in the promotion and production of porcelain enameled air markers to study the background and CAA requirements for segmented circle airport markers. Copies of Technical Standard Order N5 and CAA drawing No. 742, of the Segmented Airport Marker System, may be obtained from Civil Aeronautics Administration, Aviation Information Staff, Washington 25, D. C.



In the base of the store's porcelain enameled tower is a 5' x 12' display case as well as an entrance to the market. Such architectural designs are said to be standard for all the markets of Lucky Stores, Inc.

Lucky markets

By Elsa Gidlow • FINISH CORRESPONDENT



Food — especially frozen food—merchandising and porcelain enamel are natural mates in the plans of the management of Lucky

Stores, Inc. for a series of what might be called super-super-markets to be erected in California. To judge by the preview afforded in San Leandro by the first of these definitely

post-war and new era markets just opened there, food shopping of the future will be an Arabian Nights' Entertainment in a Hollywood setting, with World Fair colors and lighting out of Utopia. You pass through fairy-lighted portals of pastel porcelain enamel into an interior too functional for words, where from seemingly endless vistas of open display porcelain enameled cabinets you serve yourself to some of the Temp-

tations of St. Anthony. We have not heard whether there will be soft music.

But just because it's all so light and gay to look at, don't imagine that Raymond Loewy and Associates, designers, haven't thought of all the hard-fact angles. The food trade and other merchandisers are inspecting the new Lucky Stores setup as an example of ultra-practicality in moving

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Above: Approximately 7,200 square feet of architectural porcelain enamel is incorporated in the design of market and tower. The 65' tower is 17' 3" wide and 3' 10" thick. Below: The interior of the market features 346 lineal feet of refrigerated porcelain enameled cabinets devoted to frozen foods including ice creams and iced desserts. There are also refrigerated storage cabinets for dairy products, beverages and other perishables.



The business outlook for 1948

an analysis based upon results of a symposium in which
nationally known economists and analysts participated

By Martin R. Gainsbrugh • CHIEF ECONOMIST,
NATIONAL INDUSTRIAL CONFERENCE BOARD

BUSINESS activity will again rise to new highs in 1948. But these new increases will be primarily a further expansion of the money bubble and will aggravate rather than reduce inflationary pressures built up during and since the war. Although national income and gross national production will move into new ground during the year, the net addition of real goods and services may be even lower than the modest increase recorded in 1947. Rising costs are making it steadily more difficult for American industry to supply the additional working capital required at each new round of the wage-cost-price spiral. Before the end of next year this shortage of working funds, combined with higher interest rates, tighter credit and the growing scarcity of risk capital, may compel many industries to postpone or forego expenditures for additional plant and equipment, if not to revise their production schedules downward.

This analysis is based primarily upon the results of a symposium on the business outlook for the coming year, in which more than a dozen nationally known economists and business analysts participated, under the auspices of the Conference Board. Included in this group were prominent government analysts as well as representatives from educational institutions, private research agencies and business. Most of this group anticipated that national income would rise in the first half of 1948 to a new high. The average for this period was placed at about \$5 billion above the present annual rate. Further increases in both wholesale prices and in the cost of living were also regarded as probable by almost all members of the symposium.

The average figure supplied for the index of consumers' prices for the first half of 1948 was placed at 167.5 as compared with 163.8, the latest figure available for 1947. Wholesale prices as estimated by the group would average about 161 for the next six months, or about 3 percentage points higher than the present index. Retail sales for the first half of 1948 would continue at about their present peak level, after seasonal adjustment.

Experts see little gain in industrial production

Despite the increase in dollar totals of these major business indicators, little if any gain in industrial production was anticipated by the group. Their estimates of industrial production, as measured by the Federal Reserve index, ranged from 180 to 195 for the first half of 1948, as compared with about 190 currently. The average of estimates submitted was 188, or slightly below the present volume of production. Although industrial output would then, at best, remain relatively unchanged, there was virtual agreement among the experts participating that wages would continue to rise and would average \$1.50 to \$2.00 per week over the next six months than currently.

There is growing recognition of the pressure exerted upon the demand side by our trebled money supply. But there is far too little recognition of the like pressure of high labor costs per unit of product upon the price at which goods can be offered to consumers. Increased productivity which was counted upon to offset the cost impact of the last two rounds of blanket wage increases has not yet been forthcoming. It is well over two

years since the war's end—sufficient time for the increased investment in new plant and the improved flow of materials to become evident in our records of productivity. But when our volume of manufacturing production is compared with man hours entering into such production, we find that output per man hour has remained unaltered. While output per man hour is not increased, we have steadily increased the payment for an hour's work. As a result, the labor cost per unit of goods produced today is nearly 25% higher than it was in the first quarter of 1946. Further, the labor cost per unit of product has increased steadily, quarter by quarter, since the war's end. The largest single quarterly increase of the past seven quarters occurred in the three months ending September, 1947, just as the open season for third-round wage demands began.

Labor cost per item of manufactured products has risen by 85% since 1939. Such costs bear an extremely close relation up to the prices at which finished manufactured goods are offered for sale. The compounding of a third-round of wage increases upon the already swollen structure of manufacturing means additional price pressure for manufactured goods Industrial production in the closing months of 1948 was placed at a lower figure by most of the participants than the present level or that in prospect for the opening half. Among the factors stressed in explanation of the down-turn were (a) lack of capital to maintain prospective rate of activity; (b) inability of many consumers who have not shared in wage increases to buy at steadily higher prices; (c) declining

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How we use porcelain enamel

in the production of electric signs

By Herbert B. Link. VICE PRESIDENT AND GENERAL MANAGER,
BELLOW'S ELECTRIC SIGN CO., AKRON, OHIO.

PORCELAIN enamel as a sign-facing material has gained stature by leaps and bounds since it was first introduced to the sign industry.

Although its debut in this particular field was received with considerable skepticism at the time, a few manufacturers saw the potential value of porcelain enamel, despite its relatively high cost. As porcelain enamel was accepted by more sign makers in the late twenties and early thirties, research into every aspect of its manufacture, fabrication, maintenance and new uses was carried on by inquisitive sign producers and by the Porcelain Enamel Institute, after its organization as a national trade association in 1930.

Among the sign manufacturers of that period was the Bellows Company of Akron, Ohio, later to be known as the Bellows Electric Sign Company. Bellows, first licensee under the Claude Neon patents in the Central and Eastern states, was constantly on the lookout in other industries for new materials and ideas that could be applied to its own business. Neon lighting was one of these new developments; porcelain enamel another.

Today Bellows uses porcelain enamel in the manufacture of 95 per cent of its volume production signs and in approximately 75 per cent of its custom made signs. Typical customers are Standard Oil of Ohio, Gulf Refining Co., Sun Oil Co., American Oil Co., and Pennzoil in the petroleum field; White Trucks and Nash Motors in the automobile field; Warner Bros., Schines, Loews, and Feiber Shea in the theatrical field; Coca-Cola, Borden's, Walgreen, Peoples Drug, Pepsi-Cola, etc., in general industry.

Such wide use of porcelain enamel in sign facings has come about mainly through the extensive research of both the manufacturers, producers of frit and steel, and the Porcelain Enamel Institute, functioning not as individual units, but as a combined research organization. Out of this sharing of research discoveries in porcelain enamel by industry and the Institute have come numerous developments which have improved old methods of applying porcelain enamel and introduced entirely new functions of the material as well.

One of the Institute's services—reminder counsel on handling during fabrication, shipping requirements, and other phases of sign production—rendered periodically to the manufacturer, not only keeps knowledge of porcelain enamel up to date but aids in promoting the use of porcelain enamel.

Drawings and fabrication must be "right"

Accuracy in fabrication is of prime importance in the manufacture of signs employing porcelain enamel because of the rigid specifications for

Commodore L. F. R. Bellows and Herbert B. Link, vice president and general manager, stand beneath an electric sign bearing the name of their company.





Top: Patterns are accurately processed because porcelain enameled signs require close tolerance in fabrication, hole punching and fitting of parts.



Center: Good fabrication practice is religiously followed by Bellows' men. Welds are made with metal of the same composition as the enameling stock and no flux is used.



Bottom: The porcelain enameled sheets are carefully checked for errors in color or evidence of poor enameling work, and if the material passes rigid inspection it is ready for assembly.

fitting, drilling and overall assembly. The workmanship that goes into the pattern, or full scale drawing, cannot be too highly stressed for it is from this layout that the sign facing is born. Inaccuracy on the drafting board will result inevitably in flaws in the finished product. This sense of exactness in the handling of porcelain enamel must extend throughout the plant.

All welding, shearing, cutting, and punching are done prior to enameling. Welds are made with metal of the same composition as the enameling stock and no flux is used. The welds are solid, free from cracks and gas pockets, and are cleaned of slag and scale. Exposed welds are ground smooth and flush, and surfaces of

Top: With all the preceding work done with an attitude of care and accuracy, the assembly can be accomplished efficiently and the sign completed for delivery.

Center: Good crating practices are essential for safe delivery of this porcelain enameled electric sign to the customer. The importance of crating cannot be overemphasized.

Bottom: Humorous but pointed caution labels are used effectively. Many a freight handler has caught the good spirit in which the warning is given, and proceeded to handle the crate with care.



the metal face are ground or otherwise freed from defects in fabrication.

Instructions for efficient installation

Of equal importance to the manufacturer of signs using porcelain enamel is the responsibility of efficient installation without damage to the sign. One of Bellows' distinctive aids toward this goal is the humorous but pointed set of instructions and warnings attached to every crated sign that will be handled by a number of men before reaching its destination. If satisfaction of the buyer is to be maintained over the years, the porcelain enamel sign manufacturer must carry on a continuous program of instruction for his employees on safer and more efficient methods of fabrication and shipment.



You need "sales insurance" for your business

By R. A. Dadisman • THE AMERICAN ROLLING MILL COMPANY,
CHAIRMAN, PEI MARKET DEVELOPMENT COMMITTEE

I DOUBT if there is a single successful manufacturing business today that does not carry some form of insurance.

We recognize the hazards to our investment in buildings and equipment through fire, flood, or vandalism, so we protect our investment with insurance.

No one questions the necessity of such forms of insurance—we just take them for granted.

But how many of us readily admit the necessity for carrying sales insurance? In fact, to put it bluntly, how many of us know the meaning of sales insurance, the various forms in which it can be obtained, or the amount that should be carried?

Compare the hazards

It is true your plant may become damaged in some way. But that will be accidental—no forces are conspiring to destroy it.

And yet, there are many forces deliberately and continually striving to take away from you the business you have carefully built up at great expense and effort over the years.

Unlike your plant and equipment, once your markets are gone you may never get them back; certainly you cannot buy them back as easily or as quickly as you can purchase new buildings and equipment.

Here are just a few of the competitive forces that are constantly reaching out for porcelain enamel markets:

1. Aluminum
2. Aluminum Coated Steel
3. Plastics
4. Stainless Steel
5. Synthetic Finishes
6. Other porcelain enamels

(These groups include many powerful sales and advertising programs.)

Aside from all these competitive forces that are deliberately attacking your markets, there are the natural forces which, like the shifting winds, may turn against you at the slightest quirk of circumstance.

A clash of personality, a change of personnel, a breakdown in your



plant, a strike—these are just a few of the many unpredictable and uncontrollable circumstances that may take contracts away from your business, if not from the entire porcelain enameling industry.

Yes, your fully insured plants are tangible, physical things around which you can build a fence and keep intruders out—but you can't fence in your markets.

Why sales insurance now?

The most difficult hurdle that confronts insurance salesmen is the prospect's hesitation to part with money now to protect himself in a future that seems far away.

To most of you this natural hesitation is further supported by the fact that you cannot get enough enamel-

ing iron now to supply the demands for your products.

The true story on the steel situation

Since the end of the war the steel industry has invested over a billion dollars in expansion and improvement—almost half a billion so far this year. During the last part of 1947 and 1948, an additional 2½ million tons of steel ingot capacity is scheduled for completion. In addition, nearly 3 million tons of new coke oven facilities, 3 million tons of new sheet and strip capacity are also under construction. This new sheet capacity should be completed before the end of 1948.

The current tightness in the steel market is attributed largely to the loss of 18,000,000 tons of steel ingots caused by strikes since the end of the war. A full year of production without strikes would greatly change the steel supply picture.

Meanwhile, aluminum, plastics and stainless steel are in plentiful supply right now.

Surely, with these facts in mind, it should not be a question of whether or when to buy sales insurance, but what kind of coverage is best under present conditions.

What kind of coverage?

Sales insurance is not a standard policy you can buy to fit any industry or business. As with other forms of insurance, you must determine the kind and extent of coverage that fits your special needs.

Also, like any other type of insurance, you have to continue paying your premiums year after year. The amount you should carry is relative and variable—depending upon the volume and kind of sales you want to

underwrite, and the efforts of competition.

Group sales insurance

In some cases a group of manufacturers with identical or related interests can purchase Group Sales Insurance with much broader coverage at a lower total cost than if each manufacturer were to attempt the whole job individually. Moreover, by such group activity you get a plus value of prestige and recognition that reflects favorably on all who identify themselves with the group.

The porcelain enameling industry happens to be in this fortunate position. Manufacturers of porcelain enamel products, as well as the suppliers of steel, frit, chemicals, and equipment all have a common stake in advancing the interests of porcelain enamel. All, too, are affected by the same competitive materials.

The Porcelain Enamel Institute recognized this several years ago, and took out a group coverage policy on the future sales of the industry that will pay handsome dividends as the supply situation eases.

The first step was to select a group of experienced counsellors, who were

familiar with the needs of the industry and the available forms of sales insurance by which these needs could be served most effectively and economically.

Such a group was selected from within the industry. Programs were drawn up and approved. With the aid of a competent marketing agency these programs have been faithfully carried out during the past four years.

What does P.E.I. policy cover?

Here are the major phases of sales insurance with which the Porcelain Enamel Institute provides full coverage to all manufacturers of porcelain enameled products, their suppliers, and their customers:

1. Improving Porcelain Enamel

For next year, as for many years past, the Porcelain Enamel Institute is sponsoring and financing an intensive program of creative research at the U. S. Bureau of Standards. This is being done to develop higher standards of quality and better methods of testing to insure conformity to these high quality standards.

Moreover, leading producers of enameling iron and frit, all of whom

are heavy contributors to P.E.I. activities, are carrying on intensive research work toward major improvements in the finished porcelain enameled material. Sufficient progress has been made to assure such a vastly improved product that high grade synthetic finishes will soon find difficulty in competing.

2. Training Salesmen

One of the greatest needs facing all industry today is that of rebuilding and retraining its sales force. Our total sales and distribution force is less than half the number that ordinarily would be required to move the present volume in a normal competitive market.

To help meet this need, the Market Development Committee of the Institute will undertake a comprehensive sales training program, which will include all the advantages of porcelain enamel as well as the methods of demonstrating these advantages.

When an effective and workable sales training program has been completely organized and tested, it will be offered to all manufacturers who produce or use porcelain enamel.

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The Porcelain Enamel Institute exhibit at the ICHAM meeting in Cincinnati stressed the selling points of porcelain enamel and displayed technical and sales literature supplied to Institute members.





A typical Goodyear modernization job

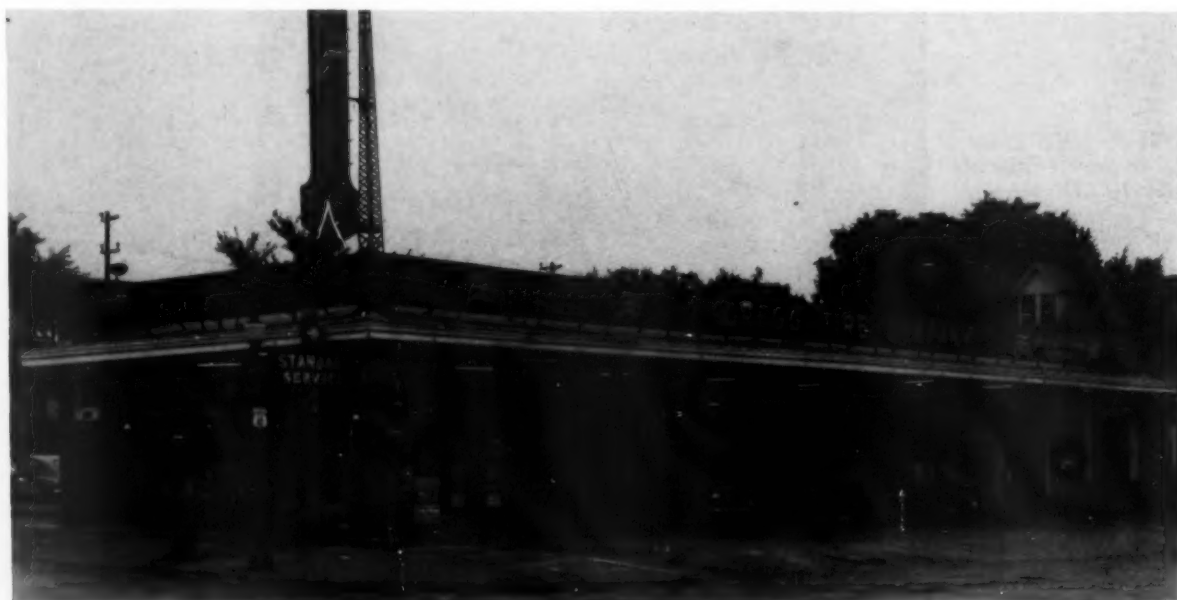
IN the modernization of the Gregg Tire Co., Topeka, Kansas, architectural porcelain enamel provided the building with a permanently attractive exterior. The channel of the identification letters and the facing of the "Goodyear" electric sign on the roof are also porcelain enameled. The electric sign was built by Bellows Electric Sign Co., Akron, Ohio.

The exterior identification was designed by the Identification Division of The Goodyear Tire & Rubber Company, Inc., Akron.

General contractor of the job was Douglas Construction Company, with the installation under the supervision of Ray Anderson of Topeka. Architects for the modernization job were Cuthbert and Suehrk.

The channel letters are blue face with yellow edge, and were provided by Davidson Enamel Products, Lima, Ohio, supplier of the architectural porcelain enamel.

This "face lifting" job is typical of many such projects throughout the country where architectural porcelain enamel is being employed to provide buildings with that "new look."



Eastern enamellers meet in Philadelphia

talk ground coat evaluation and discuss unusual plant problems

YOUR editor had the pleasure of attending the Eastern Enamellers Club meeting, Saturday, November 22, at the Sylvania Hotel in Philadelphia. Representatives were present from practically all sections of the area covered by the Eastern Club.

Nathan Klein, Club president, asked for suggestions from the membership that could be used by the program committee in the developing of constructive programs for later meetings. It was decided with the approval of Club members to invite a "panel of experts" to the next regular meeting scheduled for February 7. Included in the panel will be men with practical field experience who will be in position to answer pertinent shop questions presented by the enamellers. It is planned also to have as members of the panel men who are familiar with the current steel situation, continuous pickling, etc., in addition to the majority of the group who will be questioned on general shop practice.

Two frit men speak

Featured speakers for the meeting were L. A. Johnson, Chicago Vitreous Enamel Product Co., whose subject was "Evaluating Workability of Sheet Steel Ground Coats," and M. Bozsini, Ferro Enamel Corporation, who spoke on "Checking Unusual Plant Problems by Analytical Methods."

Ground coat evaluation

Mr. Johnson explained the difficulty of giving numerical ratings to ground coat characteristics as the reason for usually referring to them as having good or poor "workability." He emphasized the fact that laboratory tests should not replace plant testing, but should be considered a preliminary.

With slides showing photographs and detailed charts to illustrate his points, the speaker showed methods of checking frit fusibility and the use of fusion flow buttons. He explained that hardness buttons instead of flow buttons were used for compounding

frits. He then demonstrated the different effects that may be obtained in ground coat characteristics by using varying ground coats of both 2-frit and 3-frit combinations, even though identical mill additions are employed.

It was pointed out that while hardness is a most important factor in any ground coat, "range" of hardness is also quite important. It was explained that usually if an enamel develops adherence at low temperatures it shows bad burn-off characteristics. Stability of ground coat as to "set" must be good in order to control dip weights. This is also true when using automatic spraying equipment.

The use of anti-copperheading frits in small percentages for the reduction of copperheading tendencies was

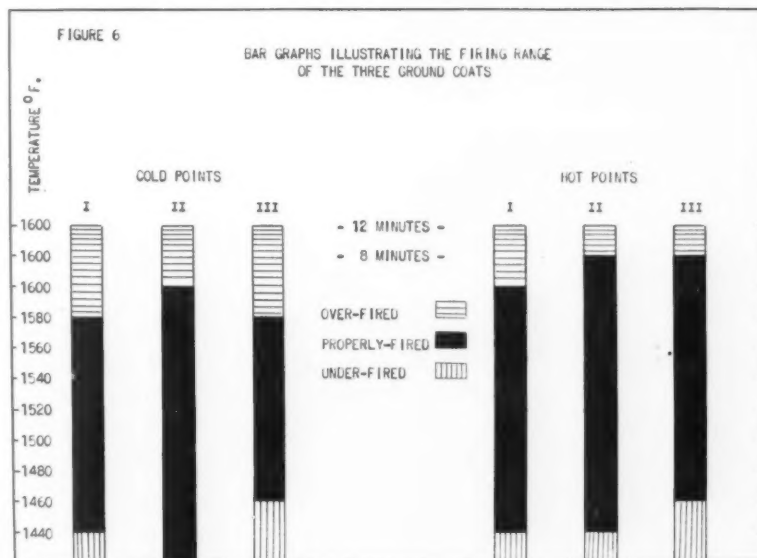
istics, and the problem should be answered in the ground coat combination.

Unusual plant problems

Mr. Bozsini referred to the "intangibles" which may often cause serious and protracted troubles in plant operation. He suggested that when the ceramic and mechanical engineer have exhausted their possibilities in searching for plant difficulties it might be well to call in the chemical engineer.

Some of the possible sources of serious enameling difficulties include water vapor which may cause blisters; acid gases from fuels, causing scumming; and sulphur trioxide.

Mr. Bozsini cited one example where a plant had recurring difficulties from



One of the slides used by Johnson shows firing range of three enamels as determined by test panels on cold and hot points.

explained. It was demonstrated that compatibility of different ground coat combinations is important if they are to become mixed in plant operations. Some ground coats can not be mixed without affecting texture. Sponginess in cover coats can result from an abnormal bubble structure in the ground coat. Sagging in cover coats is the result of ground coat character-

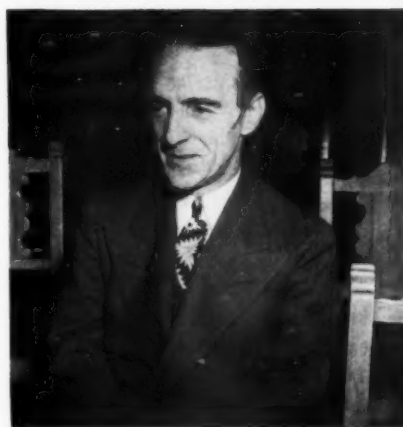
scumming over a 10-year period. By completely checking the atmosphere in the furnace and driers, and the plant atmosphere as well, the source of the difficulty was determined and the 10-year scumming trouble eliminated by turning six valves to correct the air input in the furnace and by changing direct-fired driers over to indirect heating.

More →



EASTERN ENAMELERS CLUB SNAPSHOTS

Top row: Left to right, James Cahill, Youngstown Sheet & Tube, club vice president, and Howard Williams, Pemco, club secretary; Elliott C. Aydelott, Murray Corporation, and W. H. Davis, Harshaw Chemical.



Second row: Horace Drever, The Drever Company; Ed Walker, Roberts & Mander.

Third row: Nathan Klein, Caloric Stove Corp., club president; Charles Dambach, Keeley Stove.

Bottom row: Gustitis and Petersen, Roberts & Mander; Speakers M. Bozsin, Ferro Enamel, and Lee Johnson, Chicago Vitreous.

finishfotos



Another plant had degreasing equipment installed only 50 feet from the enamel plant. Although only .8 part per million of chlorine was shown to be present, severe copper-heading was resulting. In this instance .1 part per million is the danger point. The degreasers were moved and the trouble eliminated.

In another plant vapors were condensing on a zinc coated ceiling where in combination with heat an oily liquid was forming and collecting on buss bars. It was found in this instance that the air intake was only 10 feet from the pickle room exhaust. Filters on spray booths were contaminated and the alkaline enam-

els were absorbing sulphur. The complete plant, in this instance, had a too-high concentration of sulphur. A simple but effective ventilation was employed to correct the trouble.

According to Mr. Bozsín, the slight difference between 1% and 3% water vapor represents the difference between a good furnace and a poor furnace. Tight muffles and proper stack adjustments are "musts." The practice of hanging wet ground coat on the feed end of the furnace chain without pre-drying was cited as inviting difficulties. In one case on the West Coast, a plant is going so far as to "air condition" the interior of a radiant tube furnace to control hu-

midity. Stack temperatures above 500° F. waste money, but some are said to be operating at 1100° F. to 1200° F. Other furnaces are operating with from 15 to 50% excess air up the stack.

Mr. Bozsín explained equipment and methods that can be used to completely check the plant and equipment atmospheres, and the condition of furnaces. (Example—see "New Temperature-Recording Instrument," page 58, November, 1947 finish.) It is suggested that some of these checks can be readily made within a plant if proper equipment and training are employed.

Chicago district enamellers December meeting

discuss drawing compounds and property engineering

ONE hundred and eight members and guests attended the second fall luncheon meeting of the Chicago District Enamellers Club, Saturday, December 6, at the La Salle Hotel.

Guest speakers included Dr. A. I. Andrews, University of Illinois; Herbert Van Straaten, Van Straaten Chemical Co.; Paul Jenkins and Roy Stapleton, Chicago Technical Societies Council.

Jenkins, executive secretary of the Council, discussed the work of various Council committees, and announced that plans for a new building for the Council were being considered.

Wayne Deringer, A. O. Smith, Corp., president of the club, appointed R. L. Cook, University of Illinois; D. W. Mathew, Ice Cooling Appliances; and Rudyard Porter, Carnegie-Illinois Steel Corp., as a nominating committee for an officers' slate for 1948-49.

Albert Friedmann, Better Enameling, chairman of a committee on selecting a porcelain enameling industry exhibit for the Chicago Technical Conference Show, reported a cooperative plan for financing the exhibit, and also submitted suggested long range plans for a permanent exhibit at the Museum of Science and Industry. Other members of the com-

mittee are George Tuttle, Benjamin Electric Co., and Dana Chase, *finish*.

Drawing compounds

Van Straaten presented his views on "Drawing Compounds for Porcelain Enameling," then conducted an open forum on the subject. He divided his topic into tangibles and intangibles. The tangible qualities are drawing capability and price per pound. Van Straaten discussed thoroughly the intangibles of cleanability and cost of using.

It is difficult to show just what a clean piece of material is, said the speaker, startling many of his listeners by venturing that he no longer considered "water break" as a reliable test. No test was suggested other than production run results. Specifically, he said drawing compounds should be 100% soaponifiable, should contain no pigment unless selected by experts, must not rust, corrode, etch or pit, and also should clean in a specified time at a specific cost.

Since the cleaning standards of the porcelain enameling industry are the highest for any finish, he stated that drawing and cleaning compounds should be made and tested entirely for the enameling industry.

After suggesting that the press-room and purchasing department

work together in acquiring reliable compounds, he opened the question and answer forum.

Question. What is your reaction to an emulsifying type of pre-cleaner?

Answer. If you refer to a solvent type—not practical, never have seen an emulsifier as effective as an alkali.

Question. How long may a drawing compound be left on metal and still be an effective cleaner?

Answer. Indefinitely, but more difficult to remove as time goes on.

Question. What about using a washer prior to a cleaner?

Answer. Big help—will reduce load on cleaning tank, and also is better insurance against mistakes in the pressroom.

Question. How to remove oil or foreign coatings from steel?

Answer. Some steel entering plants today has an element of surface tension which makes cleaning 2-5 times more difficult. For eliminating the surface tension, the highest type of cleaning compounds and experience is needed. In many cases today where frit is thought to be the source of trouble, surface tension due to improper cleaning should be blamed. Also, few plant men realize that contamination often comes from rinses which are a most important dip, but most neglected.

Question. What about using drawing compound before welding?

Answer. It should be removed before annealing or welding.

Property engineering

Dr. Andrews' subject, "Property Engineering in Porcelain Enamels," was directed towards thinking about new uses for porcelain enamels. He defined property engineering as "a

to Page 70 →

Enameled art

from 15th century to 1948



COURTESY THE CLEVELAND MUSEUM OF ART



Right above: This "Triptych" is the work of an early XV Century French Burgundian.

Above: Reproduced nearly twice its actual size is this XVI Century "Siren."

Left: An Italian artist, about 1500, produced this "Angel" in gold and enamel.



ENAMELING on metal had been practiced as a severely conventional art for centuries before the development of painted enamels in the 15th century allowed the enamel craftsman the freedom of a painter. Famous paintings, events and scenes were then reproduced in enamel, with thousands of Renaissance works still existing today in excellent condition.

At the 10-week Exhibition of Gold at the Cleveland Museum of Art, which concludes January 11, more than 300 displayed objects attest to the permanence of enameled artware.

Probably the most spectacular piece on exhibition is "The Siren", attributed to Benvenuto Cellini, XVI Century Florentine. It is said to have been sent to an Indian Mughul emperor by a Medici prince. Seized in the Indian Mutiny of 1857, it was a possession of the Rothschild family for generations. The torso of the figure is formed by a huge baroque



COURTESY AMERICAN ARTIST

Versatility in the use of colors in porcelain enamel art of today is depicted by Edward Winter's full-color "Flowers" mural and plaque.

pearl on which head, arms and tail or gold, covered with enamel and decked with jewels, are fitted. It was loaned to the Cleveland Museum by Duveen Bros., Inc., N. Y.

One of the most exquisite examples of enameled art is the "Triptych" by an early XV Century French Burgundian. The central decoration is a carved cameo around which folding doors tell the "Life of the Virgin" in scenes painted in enamel of an almost unbelievable fineness. It was loaned to the museum by Rosenberg & Stiebel, N. Y.

Four golden "Angels", their faces and draperies done in enamel and their wings in precious metals, are from the Metropolitan Museum of Art, New York. Only two inches high is the "Crucified Christ", all-over enameled, loaned by The Walters Art Gallery, Baltimore.

Modern enameled art

Enameling as a modern art reaches a high point in the works of Edward Winter of Cleveland, Ohio. Having access to large industrial furnaces, he is able to turn out pieces much

larger than those of the artist working with small studio kilns. One of his largest works, the seven-foot copper mural, "Animal Kingdom," exhibited at Treasure Island, San Francisco, in 1938, has made decorators aware of the possibility of incorporating enameled murals into the corridor walls of large buildings.

The February issue of *finish* will carry an account of modern enameled artware displayed at the 12th National Ceramic Exhibition, Syracuse Museum of Fine Arts, Syracuse, N. Y., November 9 to December 7.



Here Are the Answers to Consumer Resistance!

Retail authorities are agreed there *must* be good design and fine quality compensation for higher prices, if consumer buying is to be maintained at profitable levels. And it is precisely home furnishings possessing these vital qualifications that you will find featured by exhibitors at The Merchandise Mart's International Home Furnishings Market.

In this immense building you will find the largest concentration of creative leaders in the industry—a concentration that

has grown still further in size since the last Market as more and more key producers have joined the family here!

Style-right merchandise of noticeable quality will be featured here at this Market. And, equally important, the advertising, display and promotional ideas that will help you sell what you buy.

At this critical period in American retailing The Merchandise Mart, more than ever before, is a must for every home furnishings buyer.

THE INTERNATIONAL HOME FURNISHINGS MARKET

January 5th to 17th inclusive

THE MERCHANDISE MART

Centered for Efficient Year-Round Buying and Distribution

CHICAGO

Fifteenth annual meeting of cooking and heating appliance manufacturers

Sheldon Coleman is new Institute president

JUDGING from the attendance at the Institute of Cooking and Heating Appliance Manufacturers convention, held at the Netherland Plaza on December 1, 2 and 3, the stove industry has many current problems which the manufacturers feel can best be handled through cooperative effort. Of the three days allotted for the 15th Annual ICHAM Convention, only one-half day, Tuesday morning, was allotted for a "general session," the remainder of the time being devoted to divisional meetings where members could get down to brass tacks with other manufacturers of the same type of product.

Monday's program included a meeting of the Board of Trustees, with M. F. Cotes, executive vice president of Motor Wheel Corporation, and Institute president, presiding; a meeting of the Oil Division Technical Committee, with A. D. Olds, chief design engineer, The Coleman Company, Inc., presiding; a luncheon meeting of the Kerosene Stove Manufacturers; a meeting of the Gas Range Executive Committee, with A. B. Ritzenthaler, vice president of The Tappan Stove Company, presiding; a meeting of the Oil Division Executive Committee, with A. T. Atwill, president of Quaker Manufacturing Company, presiding; a meeting of the Export Committee, with Arch. Black, vice president of Borg-Warner International Corp., presiding; and a meeting of the Electric Range Division, with A. K. Walton, vice president of Newark Stove Company, presiding.

General session

Tuesday morning's general session, with President Cotes in charge, featured four leading speakers with information of importance to the entire membership. First on the program was the president's annual report to the members.

Francis H. Russell, director of the Office of Public Affairs and Advisor on Policy Planning Staff of Department of State, then spoke on "European Reconstruction and Its Meaning to American Business." This was followed by a talk, "The Business Outlook for 1948," by Martin R. Gainsbrugh, chief economist, National Industrial Conference Board, Inc. J. Loren Freund, of Kittelle and Lamb, Institute Counsel, closed the morning session with a report, "Five Months of the Taft-Hartley Act."

Tuesday afternoon, in the meeting of the Gas and Combination Range Division, porcelain enamel was featured under the heading, "New Techniques in Porcelain Enameling." Scheduled speakers were F. L. Meacham, sales manager, Chicago Vitreous Enamel Product Co., and G. H. McIntyre, vice president of Ferro Enamel Corporation.

One of the reports included in the Gas Space Heater and Floor Furnace Division program was that of F. D. Hart, president, Tennessee Enamel

Manufacturing Company, reporting for the Special Committee on Service Manuals. Presiding at this session was R. M. Liedstrand, vice president of Dearborn Stove Company.

Included on the Oil Division was a talk, "Fuel Oil Outlook," by D. S. Warning, manager of distribution, Economics Department, Standard Oil Company of Indiana.

The raw material situation was discussed also by the Solid Fuels Division, with E. M. Douthat, president, Locke Stove Company, presiding. The "Foundry Raw Material Supply Situation for 1948—Pig Iron, Scrap, and Coke," was the subject of John A. Claussen, manager, Pig Iron Division, American Iron and Steel Institute, while the "Future Potential for Solid Fuel Stoves," was discussed by J. Nelson Stuart, director of coal heating service, National Coal Association.

Jimmy Dorsey furnishes

entertainment

In accordance with custom, Tuesday evening was set aside for the

Jimmy Dorsey treats the stove men to the latest in music and entertainment.

finishfoto





Above: The three smiling gentlemen enjoying lunch are, left to right, Marshall Hanson, National Pressure Cooker Co.; Pemco Corporation's Charlie Lohman; and Kenneth Brown, of Brown Stove Works. Below: In serious conversation are J. E. Russell, Majestic Manufacturing Co., and John A. Seubert, president of Estate Heatrola Division of Noma Electric.



Above: Steel and porcelain enamel is represented in this group by, left to right, W. A. Kuenzel of Armco; Ed Mackasek, managing director of the Porcelain Enamel Institute; and George Sirovy, Jr., of Century Vitreous. Below: These men make the tools to fire the ware. They are Francis Fahrenwald and Angell Rasmussen, both of The Fahralloy Corporation.



Finishfotos from stove meeting

Above: Newly elected president, Sheldon Coleman, has an engaging smile for the camera. Lower left: Murray Corporation's Home Appliance Division is well represented by L. S. Weimer, H. M. Strong, F. W. Boynton and H. C. Beresford. Lower right: Seated in the O. Hommel exhibit are A. A. Price, The Nashville Corp.; O. Hommel's Shipp Davis and Ernest Hommel; and W. R. Mabee, Tappan Stove Company.



highlight of social activity consisting of the president's reception and banquet. Music and entertainment for the banquet was under the personal direction of Jimmy Dorsey. Open house parties were sponsored by the Merchandise Mart and Robertshaw-Fulton Controls Company.

Wednesday, concluding day for the



J. Loren Freund

convention, saw the Credit Managers in a meeting headed by B. J. Adams, credit manager of Motor Wheel Corporation; the Financial Executives and Accountants, with A. F. Jacques, treasurer, A. J. Lindemann & Hover-son Co., presiding; Labor Relations Officials, with F. H. Guthrie, president of Newark Stove Company, in charge; and Sales and Advertising Executives, with F. A. Kaiser, assistant to the president, Detroit-Michigan Stove Company, presiding.

The first speaker in the meeting of the Financial Executives and Accountants was R. W. Bowman, controller, Newark Stove Company, whose subject was "Useful Reports to Management by Financial Executives." (See complete text in this issue of *finish*.)

The theme of the Labor Relations meeting was "What makes good relations between labor and management?", which was covered in a round table discussion by members of the ICHAM Labor Relations Committee.

Sixty exhibitors

Sixty suppliers to the stove industry presented exhibits of their prod-

ucts for the benefit of stove industry members. Of prime interest to the porcelain enameling industry were the exhibits of the Porcelain Enamel Institute, Ferro Enamel Corporation, and O. Hommel Company. One of the outstanding exhibits was that of Owens-Corning Fiberglas Corporation.

The president's report

M. F. Cotes, Institute president, in his annual report to members, traced the growth of the stove industry co-operation from the 10th annual meeting of the National Association of Stove Manufacturers, held in October, 1931. He outlined the benefits of Association activity through a de-

New ICHAM Officers

President: Sheldon Coleman, The Coleman Company, Inc., Wichita, Kansas.

Secretary-Treasurer, Chairman of the Finance Committee: J. L. Raulston, United States Stove Company, South Pittsburgh, Pa.

Vice President, Chairman of Executive Committee: Stanley E. Little, American Stove Company, Cleveland, Ohio.

Vice President, Publications: F. A. Kaiser, Detroit-Michigan Stove Company, Detroit, Michigan.

Vice President, Memberships: Alden P. Chester, Globe American Corporation, Kokomo, Indiana.

Vice President, Meetings: A. K. Walton, Newark Stove Company, Newark, Ohio.

pression, a war, and the reconversion period. He pointed to the total ICHAM membership of 175 stove manufacturing concerns as an all-time high. During 1947 the Institute added a new product division devoted to the interests of gas space heater and floor furnace manufacturers.

He reviewed production figures released by the Bureau of Census showing that electric range production in the first three quarters of the year totalled 334,000 units, as compared to 577,000 units for the entire year 1946. Gas range production (including standard, apartment and bunga-

low types) for the first nine months of 1947 totalled 1,659,000 units, as compared to 1,765,000 units for the entire year 1946. Kerosene stove production in nine months totalled 1,032,000 units, as compared to 1,174,000 units for the whole of 1946. Coal cooking stove production through September totalled 368,000 units, compared to 407,000 units in 1946. Stated another way, production of all types of cooking appliances, except coal and wood ranges and combination ranges, is above pre-war peak levels, with electric ranges heading the field with a 100 per cent gain over the base period (1940-1941).

The space heating picture shows even more startling changes. In the first nine months of 1947, gas space heater production was 350,000 units above the figure for the entire year 1946, and oil space heater production in nine months was 300,000 units above the total figure for all 1946. This is significant, especially when it is remembered that in 1946 the oil space heater industry doubled



Martin R. Gainsbrugh

its pre-war production figures. Only in the coal heating industry is a drop in production evident for this year. Of a total of 4,250,000 heating stoves in the first nine months of 1947, 22½ per cent were coal and wood-burning, 33½ per cent gas-burning, and 39 per cent oil-burning.

Inventories of all types of stove

to Page 70 →

IT'S HERE!



Remember—two months ago we promised you a new cadmium red—as

outstanding as Ferro's Black. This red is now available for Porcelain enameling.

Extremely strong and unusually stable, this rich, clean red meets high physical tests . . . is exceptionally trouble-free . . . and like all Ferro oxides—has been production proved. Moreover, this "better" red is available in quantity and in a color range of light orange to a dark red.

If you haven't yet tried it, order a sample today.

Why not send us a color swatch to match?

We'll do the rest.

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ciety to the Institute of Industrial Engineers and Technicians, the Industrial Manufacturers Society and the Society for the Advancement of Manufacturing.

NEWS

V. A. Barlow's Porcelain Enamel Company announces the addition of Charles H. Gebel to the organization. Mr. Gebel (left) to left.

Thel set is exhibited by... filter... RBE Circular 5229, and in a permanent, hinged-to box.

Floetite's stainless steel... bluish background

At the general re... new "Marshall" factory... Floetite's... 1000 long by 1100 wide.

According to comp... the new... equipped with...

in May, 1945. (See "This West Coast Plant Can Produce Porcelain Enamelled Water Heaters in Quantity," November, 1946, finish.)

A visitor from Sweden



finish photo

A recent visitor at the *finish* offices was Torsten Collen, general superintendent, Kockums Jernverk (Kockums Steel Co.), Kallinge, Sweden.

The steel company rolls sheets for enameling and, in conjunction, operates a grey iron foundry. With these facilities, the company casts and fabricates parts for electric ranges, gas ranges, sanitary ware and holloware. These parts are then transferred to the firm's enameling plant (Kockums Emaljverk) in Ronneby, Sweden.

Mr. Collen was in the States for approximately two months with Erik Kockum, company president.

In commenting to *finish*, Collen said they were glad to visit the States again as there had been no opportunity during the war to develop valuable business contacts. He said they had found a very "big" hospitality and kindness everywhere they went in the United States, including steel mills, plants making ranges, and enameling plants.

Our visitor returned to Sweden, December 5, via the "Gripsholm."

Leeds & Northrup buys additional building in Germantown

Purchase of a two-story and basement building at 34 East Logan

Hackler to North Carolina State



The Ceramic Engineering Department, North Carolina State College, has announced the appointment of William C. Hackler to the teaching staff.

Hackler was graduated from Virginia Polytechnic Institute in 1943 with the Bachelor of Science degree in Ceramic Engineering. During the war he served with the 104th Infantry Division in Germany as a captain.

During the academic year 1946-47, Hackler completed the requirements for the Master of Science degree at V.P.I. His thesis was titled "An Investigation of Hudson River Clay Deposit."

Forums on ceramic industry jobs at Alfred University

A series of forums on "Jobs in Ceramic Industries" is being spon-

sored at the New York State College of Ceramics at Alfred University by the student branch of the American Ceramic Society. The series is designed to present a cross-section of the industries which ceramic students may enter and to give seniors more specific information about the types of jobs available.

Youngstown plans to boost coke and iron production

The Youngstown Sheet and Tube Company plans to boost coke and iron production at its Indiana Harbor plant, East Chicago, Indiana, next summer. Seventy-five new coke ovens are to be built and the No. 1 blast furnace is to be rebuilt and enlarged from 800 to 1,400 tons per day.

Fowler Manufacturing expands

Establishment of sales representatives in China, Japan and the Far East was announced by Paul L. Fowler, president, Fowler Manufacturing Company, Portland, Oregon, coincident with a report of the first sales in Manila and The Philippines.

Makers of electric water heaters with porcelain enameled tanks, the Fowler concern only recently expanded its market from 11 western states and Canada to the midwest and southern states through an agreement with Nash-Kelvinator Corp. The manufacture of heaters was consolidated in Portland when the firm occupied a streamlined white stucco building

Street, one block from its main plant, by Leeds & Northrup Company, manufacturers of electrical measuring instruments, automatic controls and heat-treating furnaces, has been announced by C. S. Redding, president of the 48-year-old firm.

The newly acquired property will add approximately 11,000 sq. ft. of floor space to the 288,886 sq. ft. now in use at the firm's plant on Stenton Avenue.

PEI sign division to meet during 2nd Sign Convention

A meeting of the Sign Division, Porcelain Enamel Institute, will be held Monday, January 19, at Hotel Stevens, Chicago, during the Second Annual Convention of the National Electric Sign Association. The Convention will last from January 19 through 21.

The agenda of the PEI Sign Division will include: (1) proposal for the Institute to adopt standard colors for porcelain enamel sign manufacturers, (2) election of a divisional chairman, (3) election of a divisional representative on Market Development Committee, (4) discussion of 1948 Sign Market Promotional Program, as recommended by the Market Development Committee, and (5) general problems of the porcelain enamel sign industry, including a discussion of specifications.

Industry members planning to attend the convention, and requiring hotel accommodations, should write or wire the Stevens Hotel immediately, stating their reservations are for the NESA Convention. Ed Mackasek, managing director of the Institute, has asked that his office be advised of intended participation in the meeting so that necessary arrangements can be made.

Materials Handling Conference to discuss handling machinery

More than a dozen topics of vital interest to the machinery industry will be discussed at the Conference on Materials Handling which will be a feature of the second National Materials Handling Exposition to be

held at the Public Auditorium, Cleveland, Ohio, January 12-16.

The major theme of the discussion will be cost reduction through improved handling. Discussion subjects have been selected for their widest appeal from the practical operating standpoint.

Joseph Foster dies



Joseph Foster, vice president, The Enamel Products Co., died Nov. 19 at his home in Shaker Heights, Ohio.

A founder of Enamel Products in 1912, Foster was an outstanding figure in the porcelain enameling industry for almost 40 years. He was active in the affairs of the Porcelain Enamel Institute since its early days and was a member of the Board of Trustees for many years.

Foster was a dynamic leader and never ceased in his effort to help the industry achieve higher standards of operating efficiency and product quality. He was an unyielding opponent of all things that he regarded as detrimental to its interests.

Son of Rear Admiral Joseph Foster, United States Navy, Foster was born 67 years ago in Shanghai. He was reared in Portsmouth, N. H., and was graduated from Harvard College in 1902.

AGA home service chairman

Miss Elizabeth J. Lynahan, home service director, The Peoples Gas Light & Coke Company, Chicago, has been appointed chairman of the

Home Service Committee, American Gas Association, according to C. S. Stackpole, chairman, AGA Residential Gas Section.

Institute tests products of ten steel kitchen cabinet makers

At a meeting in Cleveland of the Steel Kitchen Cabinet Institute, of which H. S. Lawrence is president, announcement was made that laboratory tests sponsored by the Institute are being made on the cabinet construction and finishes of ten different manufacturers.

According to S. S. Keeney, executive secretary, all the standard tests are being carried beyond the point of present specifications for minimum quality. He said this is to provide data by which the standardization committee can evaluate the progress in the industry and recommend new specifications for tests in line with that progress.

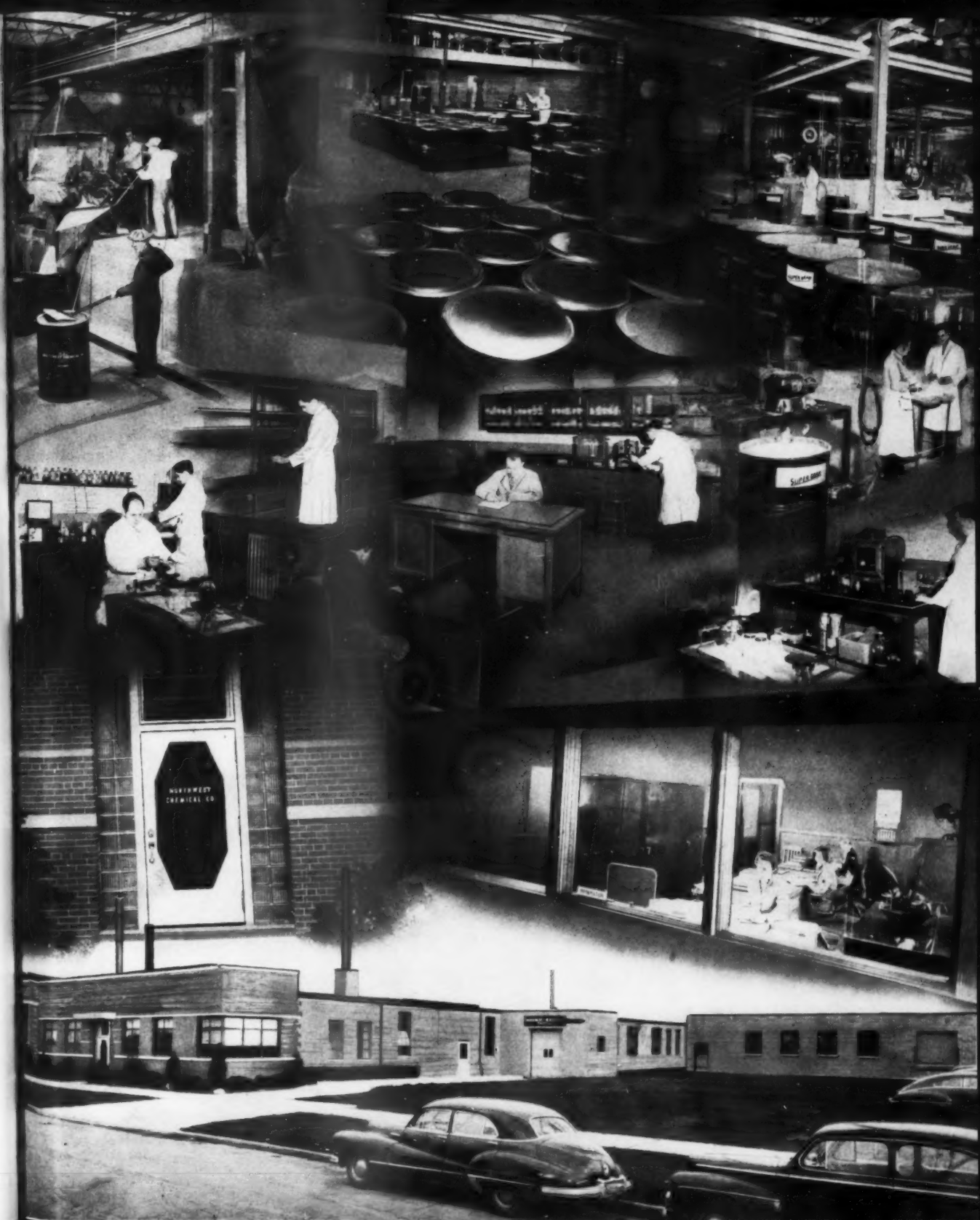
Keeney made the further observation that the American housewife, in buying radios, toasters, refrigerators or other appliances, *is more quality-conscious today than ever before.* "In providing assurance of a quality product both to the specifier of steel cabinets and to the consumer," said Keeney, "the quality standards program of the Institute is entirely in line with present-day trends."

Wirebound Institute conducts transcontinental clinics

The initial phase of the Wirebound Institute, inaugurated last summer, has been completed with "astounding" results, according to L. S. Beale, secretary, Wirebound Box Manufacturers Association.

A total of 246 industry personnel attended a transcontinental series of one-day "clinics" conducted as an industry-wide effort to disseminate technical training to the personnel of member companies.

The Institute was inspired as an Association activity because of the realization of Association members that the designing and construction of proper shipping containers are



Announcing

Recent completion of a third addition to the original building purchased in 1942 (our tenth year) was doubled in size in 1944. Now the new building adds forty per cent to the floor space and is entirely devoted

NORTHWEST CHEMICAL CO.
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Announcing

to our "SUPERDRAW" products. It is proven logical that the same technicians who supply the correct lubricants for drawing metals also provide the material for making it chemically clean afterward.

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highly technical problems requiring specialized training.

The whole course requires a registrant to complete by mail three series of 10 lessons each on "The Design of Wirebound Boxes," "Testing the Performance of a Wirebound Box in the Laboratory," and "Quality Control as It Affects Wirebound Box Performance." A series of clinics is planned after each five lessons.

Winter furniture market scheduled for January 5-17

Thousands of buyers will enter the winter furniture markets to supplant home goods which sold, at the manufacturers' price level, to the total of 5 billion dollars during 1947.

Many optimistic factors will guide general buying policies of these buyers attending the International Home Furnishings Market in Chicago, January 5-17, at the American Furniture Mart and the Merchandise Mart.

Some of these policies will include: An insatiable consumer demand for home goods; a record-breaking 1947 in retail sales of home furnishings; a total increase of 15% in retail dollar sales in 1947, much of the volume coming during the last five months of the year; a well-defined consumer desire for better quality; and the buying public enjoying the largest income in the nation's history.

The buyers will face some pessimism also. They will learn that manufacturers have been operating at capacity commensurate with materials available in most instances since early fall; factories have increased their record-breaking 1946 production records by 32% and could not fill all their orders. They will find steel is a deterrent factor, that labor is not in plentiful supply, and that prompt delivery of many commodities is not possible.

Col. Lawrence H. Whiting, president, American Furniture Mart, sizes up the home goods prospects for 1948 as:

"Manufacturers are running 32% ahead of 1946 in dollar volume. This is on top of a 90% increase registered from 1939 to 1946. Wholesalers are running 20% ahead of 1946 while retail sales, nation-wide,

Rahr Color appointment

Frederic H. Rahr, president and director, Rahr Color Clinic, 9 East 56th St., New York City, announces the appointment of Dan Somma as director of sales. Somma's work will be concentrated on selling the company's national consumer color survey which determines the color wants for future home furnishings and decoration markets.

been reduced from 50% to 60% as reported in July, 1946, to only one-third ahead, which is about the amount of inventory, in relation to sales, that prevailed pre-war."

The Merchandise Mart, in order to obtain a complete picture of the home furnishing industry at the winter market, will expand its series of daily press conferences to include a conference with retailers.

Wallace O. Ollman, general manager of the Merchandise Mart, has announced that important personalities in the retail field will participate in a round table discussion with the press on Friday, January 9, following a series of five daily press conferences with leading manufacturers.

Republic reception room gives lesson in steel making



In the 14th floor reception room of Republic Steel Corporation, Republic Building, Cleveland, a visitor may get a quick lesson in steel making as he inspects the various exhibits.

Production of pig iron, and steel making by open hearth, Bessemer and electric furnace processes are graphically explained by colorful lighted charts and explanatory copy.

Photo murals show the large equipment installations necessary for the production of steel such as the 98-inch continuous hot strip mill in Cleveland, said to be the world's widest and fastest.

Other displays describe the products Republic's manufacturing divisions and subsidiaries such as Berger Mfg. Division, Canton, Ohio; Trus-

con Steel Co., Cleveland and Youngstown, Ohio; Niles Steel Products, Niles, Ohio; Steel & Tubes, Cleveland, Detroit and Brooklyn.

An elaborate photo montage background illustrates some of the varied uses for steel such as agriculture, railroads, automotive, power, machinery, export, aircraft, mining, communications, canning, petroleum, construction and the home.

To round out the lesson in steel making and the utilization, typical products made from all types of rod, sheets and wire are on display in finished form. All in all, it is a constructive and educational exhibit.

One thousand years coal supply

The world has spent more of its mineral wealth in the past 40 years

IT MAY
BE FUN..
BUT IT'S
NO WAY
TO BUY
FRIT



There's No Gamble in "PLANT-TESTED" PORCELFRIT!

● Far be it from us to look down our noses at anybody who likes to take a flyer now and then. But if you gamble on the frit you buy . . . brother, are you asking for trouble!

It's *plant testing* that takes the gamble out of Ing-Rich PORCELFRIT. Not only is it subjected to every laboratory test, but its daily use in our own job enameling plant gives it the *practical* workout. No wonder that when we tell you it's right we *know* it's right!

Moreover, we want it to be right for you. So we have a corps of competent ceramic engineers who will visit your plant and adapt PORCELFRIT to your individual needs . . . all without obligation to you!

INGRAM-RICHARDSON MFG. CO., OF INDIANA, INC.

OFFICES, LABORATORY AND
PLANT, FRANKFORT, INDIANA



than in all preceding history, according to Harold J. Rose, vice president and director of research, Bituminous Coal Research, Inc., Pittsburgh, Pa. Production has been particularly great in the United States, so that we are already a "have not" nation, or are rapidly becoming one, with respect to many important minerals.

The one outstanding bright spot in this very serious situation is our enormous coal supply. In fact, we have about one half of the world's known reserves. Our coal resources are so enormous that they can supply all the United States requirements for heat, light, power, transportation, the smelting of metals, all liquid and

gaseous fuels, and most synthetic chemicals for more than 1000 years at the present rate of consumption, with allowance for mining losses and conversion efficiencies, said Rose.

New Norge sales promotion manager

M. C. (Craig) Miller has been named manager of sales promotion and sales training for the Norge division, Borg-Warner Corp., it was announced by M. G. O'Harra, vice president and director of sales. Miller was formerly with the Maytag Company, having been employed by that firm from 1926 until 1943.

Lots of porcelain enamel on this range



Geo. D. Roper Corporation continues to use and sell porcelain enamel on all logical parts of their gas ranges. Here we see a display which shows both exterior and interior en-

ameled surfaces and, in addition, many of the invisible parts of the range are also porcelain enameled. Of the parts visible, we see complete white exterior, burners, grates, burn-

er trays and oven and broiler linings.

Gene Howe to Lustron Corporation



E. E. (Gene) Howe resigned recently as assistant director of research, Chicago Vitreous Enamel Product Company, to join the Lustron Corporation organization at Columbus, Ohio. Howe is to have complete charge of porcelain enameling operations for the new corporation, established to build porcelain enameled steel houses.

Howe is well known in the enameling field, having served with the Chicago Vit organization since 1934. His work there included laboratory development and control, sales engineering and field service and, during the war, he was chief metallurgist in connection with armor plate production. In 1946 he became assistant director of research.

His education includes a B.S. degree in ceramic engineering (1931) and a M.S. degree (1934) from the University of Illinois, and research laboratory work at the U. of I. He is a registered professional engineer and a member of the American Society of Metals.

Lustron moves to Columbus

It is reported that Lustron Corporation has completed a lease for the Curtiss-Wright plant at Columbus, Ohio, for the production of porcelain enameled steel houses.

The new Lustron Corporation, headed by Carl G. Strandlund, presi-



THE O. HOMMEL COMPANY has contributed much to the progress made in the enameling industry since the war . . . and will, this year, play an even larger part.

With expanded facilities we are serving more customers with more and better enameling supplies than ever before. These porcelain-enamel users find our frits and clays outstanding. If you are not already using our Ground Coat, Cover Coat, Acid-Resisting Frit, Tite-Wite Frit, or Powdered Clays, let us show you — by comparison — why you should adopt O. Hommel Company's frit and clays.



Laboratory Controlled Production of Ceramic Supplies

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- CERAMIC COLORS
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- METAL POWDERS
- SUPPLIES
- EQUIPMENT

Our Technical Staff and Samples are available to you without obligation. Let us help you with your problems.

World's Most Complete Ceramic Supplier

dent, is said to have purchased all interests of the Chicago Vitreous Enamel Product Company in the Lustron house. Members of the board of directors of the new corporation include: Joseph E. Nolan, of Bell, Boyd Marshall; Raymond E. Hurley, vice chairman, Thor Corp.; Louis Leverone, president, Automatic Canteen Co., and Howard E. Buhse, partner, Hornblower & Weeks, all of Chicago; George Delp, president, New Holland Machine Co., New Hol-

land, Pa.; Paul O. Buckley, director, Federal Machine & Welder Co., Warren, Ohio, and Raymond Haynes, partner, Wellington & Co., of New York.

It is indicated that production in the Columbus plant will not be under way before six or seven months. Thirty thousand houses a year is the goal set by the corporation, which is said to be capitalized at \$16,340,000, of which \$15,500,000 represents a RFC seven-year, four per cent loan.

Cribben & Sexton appointments

The appointments of Ben Gillette as general foreman of the enamel

During the war period Gillette was in charge of Cribben's aircraft en-



Ben Gillette



Charles Turner

shop and Charles Turner as enamel technician have been announced by Cribben and Sexton Company, Chicago, manufacturer of "Universal" ranges.

gineering. In 1946 he was promoted to enamel technician. Turner joined the engineering department of Cribben and Sexton following 3 years with the Army Engineer Corps.

Carnegie-Illinois to increase coke production facilities

Carnegie-Illinois Steel Corporation has announced awarding of a contract for a new and 16th coke oven battery at the Gary Steel works of the U. S. Steel subsidiary. The battery will include 77 ovens with a daily coke production capacity of 1,096 tons, and will increase the Gary works' coking installation to 1,132 coke ovens.

Koppers to manage construction of Chilean integrated steel plant

Koppers Company, Inc., and Compania de Acero del Pacifico of Chile (Pacific Steel Company) announced the signing of a basic contract by

which Koppers will have supervision of construction, engineering, and management of the first integrated steel plant to be built in Chile. The new plant will produce 250,000 tons of finished steel annually when in operation.

DeVilbiss school of spray finishing announces classes

Spray finishing classes for industrial finishers for the first half of 1948 are being announced by The DeVilbiss School in Toledo, Ohio. The intensive one-week courses will begin on February 2, March 1, May 10 and June 7.

All users of DeVilbiss equipment are eligible for this tuition-free in-

struction on the spraying technique and the function and care of spray equipment. All those interested should write for reservations to The DeVilbiss Company, 300 Phillips Avenue, Toledo 1, Ohio.

AGA certification program

The American Gas Association has announced a new Certification Program which promises to be a great aid to architects and builders, as well as affording a buying guide for prospective home owners.

For the past three years, Association national advertising has told consumers of the benefits of modern automatic gas kitchens. An outgrowth of this promotional campaign is the new program which has the support of local gas utility companies which are said to serve more than 12,000,000 families.

Four national requirements have been set up for certification. They are: scientific planning, automatic gas cooking, automatic gas refrigeration, and automatic gas water heating sized to take care of all household needs.

Utility gas sales continue climb

Sales of the utility gas industry to ultimate customers in October, 1947, totaled 2,152,536,000 therms, a gain of 5.4% over October, 1946, sales, according to an American Gas Association report.

The Association's October index of total gas utility sales stood at 184.2% of the 1935-1939 average. For the 12 months ending October 31, 1947, total utility sales of gas were 28,620,638,000 therms, an increase of 10% over a year ago.

Richard P. Brown, chairman of the board, Brown Instrument Co., Philadelphia, industrial instrument manufacturer, has been made a fellow of the American Society of Mechanical Engineers. A director of Minneapolis-Honeywell Regulator Co., Brown holds 54 patents on industrial recording and control instruments. He recently was awarded an honorary de-



Symbols of Quality

that mean more business and lasting friends for you and your customers !

U·S·S VITRENAMEL is the name of a special type of steel sheet produced by the Carnegie-Illinois Steel Corporation to the exacting requirements of the porcelain enamel industry for more beautiful and more durable porcelain enameling. The familiar U·S·S Label coupled with the Quality Symbol of the Porcelain Enamel Institute, Inc., gives added sales value to any product.

CARNEGIE-ILLINOIS STEEL CORPORATION

Pittsburgh and Chicago

COLUMBIA STEEL COMPANY, *San Francisco, Pacific Coast Distributors*

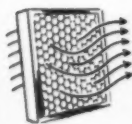
TENNESSEE COAL, IRON & RAILROAD COMPANY, *Birmingham, Southern Distributors*

United States Steel Export Company, *New York*

UNITED STATES STEEL

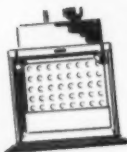
HERE IS WHAT **Binks** MEANS BY A *Complete* FINISHING SYSTEM FOR PORCELAIN ENAMEL

3. AIR SUPPLY SYSTEM



Warm, dust-free air in the spray room or booth is essential for fine finishes and health. Binks custom-built air supply systems provide the right volume of warm filtered air for maximum efficiency.

4. AIR EXHAUST SYSTEM



Fumes and frit-laden air must be vented quickly. Binks exhaust systems range from simple ventilating fans to highly efficient Dynaprecipitor water-wash units that remove and reclaim all frit.

5. COMPRESSED AIR



Binks compressors are made in many capacities to provide ample air for the operation of one or many spray guns. Binks oil and water extractors clean the air before it reaches the gun.

"...Binks will never stop looking for better ways to make spray finishing equipment."

J. D. Roche
President

Binks

2. PROPER ILLUMINATION



Good finishing requires good lighting. Binks installations are equipped with special vapor-proof reflectors that provide even, shadowless illumination . . . that meet all Fire Underwriter's requirements.

1. APPLICATION OF FINISH



Binks makes a long line of precision manual and automatic spray guns especially designed for the application of porcelain and synthetic enamels. There is a Binks gun for every size and type of industry, each truly the best in its class.



6. PRODUCT HANDLING



Mechanical handling puts porcelain enamel finishing on a fast production line basis, increases the finish quality and reduces finishing costs by eliminating hours of manual work.

7. MATERIAL HANDLING



Binks material tanks are designed especially for ceramic finishes. All parts that come in contact with the frit are corrosion proof. There is no chance of a particle of rust spoiling a batch of frit.

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gree of doctor of engineering by Drexel Institute of Technology.

AGA home service workshop held in Chicago

New developments and practical working information on a broad scale will be brought to the nation's gas utility home service personnel at the four-day Home Service Workshop, sponsored by the Home Service Committee of the American Gas Association, which takes place in Chicago, January 21-24.

More than 30 home service, equipment, food, education and sales authorities will be featured on the program which is under the direction of Elizabeth J. Lynahan, home service director, The Peoples Gas Light and Coke Co., Chicago.

Headquarters of the workshop will be at the Congress Hotel but two sessions will be held in the auditorium of Peoples Gas.

Stewart-Warner Corporation directors have declared a cash dividend of 25¢ per share of five dollar par value common stock payable January 10 to stockholders of record December 11, 1947.

Gas industry adopts "pin-up" girl



© Am. Gas Assoc. Inc. 1947

The gas industry has adopted a "pin-up" girl known as "Miss Flame."

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Developed and copyrighted by the American Gas Association, "Miss Flame" is being shown throughout the country adding color and zest to gas industry advertising, displays and promotional material. She made her debut recently in "The History of Gas," first of a series of four-color picture books.

Manager appointed for ACS golden jubilee exhibit

The American Ceramic Society will hold a Golden Jubilee Exhibit in conjunction with its 50th Annual Meeting, April 25-30, 1948, at the Palmer House in Chicago. Ken M. Davee, 11 South La Salle Street, Chicago, has been selected as exhibit manager.

A partial list of companies having displays at the exhibit follows:

Amsler-Morton Company, Atlantic Sponge & Chamois Corp., Avery Adhesive Label Company, The Bonnot Company, Corhart Refractories Co., Deister Concentrator Company, Denison Engineering Company, The DeVilbiss Company, B. F. Drakenfeld & Co.,

Electro-Refractories & Alloys Corp., Eriez Manufacturing Company, Fate-Root-Heath Company, Ferro Enamel Corporation, S. G. Frantz Co., Inc., Great Lakes Foundry Sand Co., Hardinge Company, Inc., The O. Hommel Company, Ingram-Richardson Manufacturing Company of Indiana.

International Clay Machinery Co., Kux Machine Company, Lancaster Iron Works, Magnaflux Corporation, Magni-Power Company, Paul McKamy & Associates, Metalloy Corporation, National Engineering Company, New Castle Refractories Company.

Orefraction, Inc., Patterson Foundry & Machine Co., Pemco Corporation, Perma Flux Mold Company, Polarizing Instrument Company, Robinson Ventilating Company, Rotospray Manufacturing Co., Sauereisen Cements Company, H. C. Spinks Clay Company.

F. J. Stokes Machine Co., Swindell-Dressler Corp., Titanium Alloy Mfg. Co., U. S. Gypsum Company, and Universal Sanitary Mfg. Co.

Space is still available for displays, according to C. S. Pearce, general secretary of the Society, who asks that interested firms contact his office or Mr. Davee for details.

ACS Pittsburgh section meetings

The next meeting of the Pittsburgh Section of the American Ceramic Society will be held Friday, January 16, in East Liverpool, Ohio. The meeting will feature John W. Miller of New Castle Refractories.

Dr. Barta, Head of the Glass and Ceramic Departments, University of Prague, Czechoslovakia, was a guest

at the section's joint meeting with the Pennsylvania Ceramic Association, Royal York Hotel, Pittsburgh, November 11.

Northern Ohio ACS meetings

More than 40 persons attended the December 4 meeting of the Northern Ohio Section of the American Ceramic Society.

John Dufault, field engineer, Leeds & Northrup Co., discussed "Pyrometry in the Ceramic Industry." His talk covered three phases of the development and proper use of the pyrometer.

The annual election of Section officers will be held at the next regular meeting on February 5.

Patterson Foundry appointment



Earl W. Dilg has been appointed district manager of The Patterson Foundry & Machine Company, East Liverpool, Ohio, with headquarters at the firm's Cincinnati office, according to a recent announcement. Dilg formerly was chief engineer and sales manager of International Engineering, Inc., Dayton, Ohio.

Bob Foraker on Pemco service staff

Robert W. Foraker has been placed on field service work in the Midwest by Pemco Corporation. Bob was with Chicago Vitreous for one year following graduation from high school. Then he attended the University of Illinois, graduating in ceramic engi-

neering in 1943. For two years he was with the Aluminum Company of America as metallurgist, then with Ingersoll Steel Division, Borg-Warner Corp., in the enameling division. He joined the Pemco staff in September, 1947.

Bob is a nephew of Ralph Foraker, sales representative for Pemco.

ASTE to meet in Cleveland

Following a meeting of a general policy committee, the American Society of Tool Engineers announced developments in the Sixth Annual ASTE Industrial Exposition to be held in Cleveland, March 15-19, coincident to the Society's Sixteenth Annual Meeting.

above 247,350, the industry's sales in October, 1946. Sales of portable washers amounted to an additional 44,512 units, compared to 43,834 in August and 50,000, the all-time record, in January and in February.

Ironer sales in October aggregated 58,722 units, compared to the record 53,277 reported in September, or an increase of 10.2 per cent, and 399.6 per cent above October, 1946, when the total was 11,754.

Sales of standard-size washers in the ten months of 1947 amounted to 3,064,437, topping 2,023,981 in the whole year of 1946 by 51.4 per cent. The ten-month total for ironers is 469,796, or 277 per cent greater than 124,616 in all 1946.

Mullins' miniature kitchen display



A new miniature kitchen display set for "Youngstown Kitchen" dealers is announced by Mullins Manufacturing Corp., Warren, Ohio.

Each model is said to be an exact replica of a "Youngstown" unit, even to tiny handles on drawers and doors, faucets and sprays on cabinet sinks,

and back splashers on base cabinets. Each set includes two miniatures of each piece of equipment, plus a standard type range and refrigerator, a lithographed metal door, and two windows. The set comes with floor and walls, complete in a leather case for convenience in use.

AWIMA annual meeting in Chicago, January 6

The executive committee of the American Washer and Ironer Manufacturers' Association will hold an all-afternoon session January 5, followed by dinner, preliminary to the organization's annual meeting January 6. Morning and afternoon sessions and luncheon and dinner are all scheduled for the Morrison Hotel, Chicago.

Delegations by boat direct from Buffalo to Mackinac Island and by

special sleepers from Detroit to Mackinaw City are being planned already for the 1948 summer meeting of AWIMA, which will be held July 15-17 at the Grand Hotel.

Up-up-up go washer, ironer sales

Household washer and ironer sales made the greatest gains in all industry history in October. Sales of standard-size washers in October were 394,649 units, an increase of 11.5 per cent over 354,094, the all-time record set in September, and 59.5 per cent

Wirebound Box Association to exhibit model impact test equipment

At the Second National Materials Handling Exposition in Cleveland, January 12-16, The Wirebound Box Manufacturers Association will maintain an animated exhibit that stresses the strength, and "ability-to-take-punishment" qualities of wirebound shipping containers, L. S. Beale, secretary of the Association, has announced.

The exhibit features a moving miniature model of the incline impact test, as well as a gaily decorated wirebound box revolving on its axis and flashing sales messages.

Norge names service director

Thurlo F. Johnson, central regional sales manager, has been named to the newly-created position of director of national service for Norge division of Borg-Warner Corp., according to an announcement by M. G. O'Harra, vice president and director of sales.

Pennsalt changes name of acid-proof cement

The product formerly called "Asplit F cement" has been changed to "Pennsalt HF cement" by the Pennsylvania Salt Manufacturing Company, Philadelphia.

Joseph J. Duffy, Jr., manager of sales, Special Chemicals Division, explained that the new name is more



Paul O. Abbé 220, all-steel type pebble mill with "COMPACT" motor drive.

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and greater output

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For over half a century, leading manufacturers of enamels have relied on these mills for cleaner and better production.

One of the first Paul O. Abbé mills was installed in an enamel plant 50 years ago.

Since then scores of Paul O. Abbé mills have been installed in enamel plants all over the world.

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First to build all-steel ball and pebble mills.

First to turn cylinders in a lathe, insuring perfect alignment.

First to introduce counter-balance for charging cover.

First to add machine cut gears.

This is but a partial list of "Firsts" which have made Paul O. Abbé Inc. leaders in their field.

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in conformity with other company named products, with the "HF" de-

noting the cement's complete resistance to hydrofluoric acid.

Hotpoint kitchen planning schools



A series of kitchen planning schools, at which dealers and distributors worked with elaborate drawing kits and plastic appliance models to develop "Personalized" electric kitchen installations, was conducted during the last two months of 1947 by Hotpoint, Inc., Chicago.

The value of the school series has been proved by the fact that the majority of those who attended the first series, in 1946, have set up their own kitchen planning departments, according to L. C. Truesdell, vice president of marketing. Photo shows a husband and wife collaborating.

Production of water systems and heating equipment up in 1947

Information was contained in a prediction, at the annual meeting of the National Association of Domestic and Farm Pump Manufacturers, of a probable total production of 735,000 water systems in 1947 as compared with 626,000 in 1946.

Heating equipment was produced in record-breaking quantities in 1947, according to the Plumbing and Heating Industries Bureau. Factory shipments of oil burners for the first six months totalled 563,180, more than twice the amount shipped for the same

period in 1946. Factory shipments of warm air furnaces, floor and wall furnaces, and direct-fired unit heaters totalled 368,437 for the first half of 1947, compared with 264,713 for the same period in 1946.

Philco sales to exceed \$215,000,000

Sales of Philco Corporation in 1947 should run well over \$215,000,000, almost three times the 1941 volume, it was announced by John Ballantyne, president, in a letter to stockholders accompanying December 12th dividend checks covering the regular

quarterly dividend of 37½ cents and a year-end dividend of 50 cents per share. Production includes refrigerators, freezers, radios and television receivers.

Plumbing ware manufacturers increasing production facilities

In an effort to produce enough plumbing fixtures to meet today's unprecedented demand, manufacturers are doing everything possible to speed up their output, according to the Plumbing and Heating Industries Bureau. Production methods are being improved, mechanized and streamlined. New plants are being opened, and old plants are being modernized.

With about fifty manufacturers making plumbing fixtures and with each company stepping up its output, there is ample productive capacity in the plumbing industry to take care of all requirements for plumbing fixtures now and in the foreseeable future, according to the Bureau.

A 200% increase in production facilities for stainless-clad steel by January 1, was announced by officials of Jessop Steel Co., Washington, Pa. Present production of this specialty steel item is 500 tons per month.

Vance N. Wilson has been appointed safety co-ordinator for Pennsylvania Salt Manufacturing Co., it was announced by Frederick C. Abbott, manager of personnel and labor relations.

Sullivan addresses Chicago ACS Section

Fifty-five members and guests attended a dinner-meeting of the Chicago Section of the American Ceramic Society in the Electric Club atop the Civic Opera House, November 14. Guests included ACS President John D. Sullivan, Battelle Institute; Charles Pearce, general secretary of ACS, and Larry Puntney, chairman of the St. Louis Section.

Sullivan discussed "Phases of Ce-



Kyle Corp. automatic oil circuit recloser is set on a specially designed Wirebound crate base. The crate holds the recloser snugly and absorbs all impacts.



In just three minutes the wrap-around sides are secured and the 65 pound recloser is ready for shipment. Sturdy Wirebounds cut shipping damage to almost nothing.



Larger, 275 pound reclosers are also crated in Wirebounds. Prefabrication of special interior packing assures a perfect fit and gives greater shipping protection.

this 3-minute

WIREBOUND

gives KYLE CORP.

**greater protection and
lower freight costs!**

Automatic oil circuit reclosers manufactured by the Kyle Corporation of South Milwaukee, Wisconsin, are built to withstand rugged use, but the company experienced shipping damage when reclosers were packed in boxes because porcelain bushings often broke under rough handling and oil leaks developed as the result of inadvertent "upside-down" loading.

Wirebound Crates have solved these shipping problems. Wirebounds are tailor-made for the Kyle reclosers in such a way that jolts and shocks are absorbed by the container itself. And when freight handlers actually see the recloser inside the crate, upright handling and loading naturally follows.

Moreover, Wirebound's time-tested combination of steel wire and thinner wood reduce shipping costs, bring important shipping room economies in low initial cost and speed of assembly. Just three minutes elapse from the time a recloser is placed on the crate base until the completed unit is ready for shipment—in safety! Shipping room space is conserved, too, because Wirebound wrap-around sides, bases and tops are stacked flat.

Today, all Kyle reclosers are shipped in Wirebounds and damage claims are negligible! To learn more about the benefits you, too, may receive by switching to Wirebounds, fill out and mail the coupon below.

MAIL THIS COUPON TODAY!

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CITY _____ ZONE _____ STATE _____

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Wirebound
BOXES & CRATES

ramics in Our General Engineering Economy," illustrating his speech with slides showing economic trends of various materials. It is not probable that we shall ever become a "have not" nation, said Sullivan, who pointed out that whenever one material runs out, a new product is developed which is, in many cases, much better than the old one.

Moreover, emphasized Sullivan, our standard of living will not decline as long as we continue consuming 95 per cent of the goods produced in this

country. And as civilization advances, so will our standard of living. Non-metallic products are bound to play an increasing part in our economy, stated Sullivan, pointing out that newer products are advancing at the expense of the older ones.

Pearce commented on the increase in the number of college students securing ACS membership. He also discussed plans for the American Ceramic Society 50th Annual Meeting to be held in Chicago in April, 1948.

Gas Appliance Manufacturers year-end statement

During 1947, the gas utility and liquefied petroleum gas distribution systems added more than 1,000,000 homes, bringing to 24,000,000 the number of homes served by the gas industry, according to John A. Robertshaw, president of the Gas Appliance Manufacturers Association.

Substantial progress was recorded for 1947, but the manufacturers, whose capacity to produce, in most lines, is now double that of pre-war, are still faced with an unprecedented demand for gas appliances. Handicapped by both material shortages and fuel distribution limitations, the manufacturers see no hope for the immediate future of operating on production schedules commensurate with consumer demand.

Of more than 24,000,000 domestic gas ranges now in use, it is estimated that 50% are over 10 years old and eligible for replacement. The residential construction during the coming year including veterans housing programs will make sizable demands on all appliance manufacturers. Shortages of steel, especially enameling sheet, are preventing the greatly expanded gas manufacturing industry in reaching peak production. 1947 production of 2,250,000 ranges just equals 1941.

Production of automatic gas-fired water heaters will have reached 1,300,000 in 1947, a half million increase over 1946. Combined installations of gas-fired boilers, furnaces, and conversion burners approximated 750,000 in 1947.

Additions to residential services have been curtailed due to lack of sufficient transmission.

Gas refrigerator production during 1947 showed a substantial increase over the preceding year.

The Association expects the new automatic gas clothes dryers will show increased production in 1948.

The Liquefied Petroleum gas industry continues to present a substantial fast-growing outlet for gas appliances and equipment. During 1947 about 26% of all gas ranges, 21% of all automatic gas water heaters, and 14% of all gas floor furnaces were for use with LP-gases.

The tremendous increase in the productive capacity of gas appliance manufacturers over pre-war years, unfortunately, cannot be brought into full play until such time as steel is available in necessary quantity; and in the case of central heating equipment manufacturers, until the gas distribution facilities are also sufficient to meet the demands in various sections of the country where limitations are in effect.

Millions of dollars have already been appropriated for expanding the gas manufacturing facilities of manufactured gas companies, and the transmission facilities of natural gas pipe line companies, in order to meet the growing demand in present markets and reach new markets. Gas appliance manufacturers look forward with anticipation to the construction advances expected in these fields during 1948 and through 1951.

Central District Enamelers met December 12

The December meeting of the Central District Enamelers Club was held December 12 at the Allerton Hotel, Cleveland, Ohio. Featured speakers were Raymond Metzner, Cleveland attorney, who discussed the Taft-Hartley law, and Karl Kautz, of Climax Molybdenum Company, who spoke on low temperature porcelain enamels.

A report on the Kautz paper and photographs of the meeting will appear in February finish.

Furnishings displays at International Amphitheatre

In addition to the permanent furnishings exhibits at the American Furniture Mart and The Merchandise Mart, which will be viewed by thousands of buyers at the annual Winter International Homefurnishings Market, Chicago, January 5 to 17, there will be temporary displays for the convenience of buyers at the International Amphitheatre, January 15 to 22, according to an announcement.

Chairman of national trade group



L. S. Beale, secretary, Wirebound Box Manufacturers Association, has

to Page 68 →

Here it is!

The ENAMELER'S DICTIONARY

Ferro's Newest Contribution to the Industry

Now you can have your own modern dictionary of Porcelain enameling terms.

Written for enamellers by enamellers, this new, 92 page volume contains the most complete glossary of Porcelain enameling terms ever compiled—plus 15 pages of valuable reference charts and illustrations.

Write today for your copy of this outstanding addition to your Porcelain enameling reference file.

- **UP-TO-DATE**—presents newest words and terms as well as old trade terms.
- **COMPREHENSIVE**—defines unusual as well as usual terms. Covers all phases of Porcelain enameling plus many related items.
- **CONCISE**—explains terms briefly in a way easily understood by technicians and laymen alike.
- **CONVENIENT**—size 9 x 6 inch: bound in heavy cover with embossed lettering, complete with over 1,200 separate terms, 13 illustrations, 92 pages.
- **AUTHORITATIVE**—compiled by Ferro's graduate staff of Porcelain enamel technicians.



FERRO enamel corporation

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Cleveland 5, Ohio

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New Supplies and Equipment

Refractory coating

A refractory coating for preventing spalling action, resisting heat penetration and decreasing carbon, slag and clinker adherence in fire boxes, furnaces and crucibles has been announced.

Further information on this insulative coating known as "Vitroseal" may be secured by writing Whitman Company, 1407 Esperanza Street, Los Angeles 23, California.

Corrosion inhibitor for steel

A corrosion inhibitor for steel and other ferrous metals has been developed. This product, known as "Steelyfe 11," has as its active ingredient the barium salt of an alicyclic sulfonic acid. It is said that there is also additional protection against corrosive sulfate ions which react with the barium liberating alicyclic sulfonic acid which in itself is an effective corrosion preventive.

For further information, contact Bee Chemical Company, 63 East Lake Street, Chicago 1, Illinois.

High precision spray gun



Development of a new high precision production spray gun has been announced. The gun is said to handle all types of finishes. Known as "Model 18," it embodies suggestions of both the engineering and finishing departments of some of the largest industries in America.

"Model 18V" is for use in the ceramic industries. It is the same gun as the other model with tungsten carbide inserts in the material nozzle

and needle valve to insure long life when abrasive materials are used.

Contact Binks Manufacturing Company, 3116-18 Carroll Ave., Chicago 12, Ill.

Temperature-calibrated potentiometers



A new series of direct-reading temperature-calibrated portable potentiometers for use in laboratory, plant and field has been announced.

According to a press release, accuracy in keeping with high sensitivity is assured by special structural features which maintain the thermocouple reference-junction and the automatic reference-junction compensator at substantially equal temperatures, irrespective of changes in the ambient temperature.

Technical description of the device is included in Bulletin 270, available on request from Rubicon Company, 3639 Ridge Avenue, Philadelphia 32, Pennsylvania.

Generators for metalworking

Designed to meet the demands of the metalworking industry, three new types of 20 kw 450 kc radio frequency generators consolidate generator, worktable or sink, current transformers and water fittings into one unit requiring minimum floor space.

Stepless power output control from 0 to 20 kw is said to provide operating flexibility in the new generators

and insure uniform performance on repetitive setups.

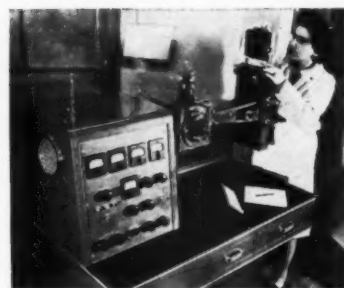
Further information may be obtained from Westinghouse Industrial Electronics Division, Plant No. 4, Baltimore, Md.

Surface grinder

A new 6 x 12 x 10 1/2 surface grinder is a self-contained unit with a two-speed ball-bearing spindle. It is motor driven by a 3/4 HP motor and completely equipped with dust guards.

Contact H. Leach Machinery Company, Providence, R. I., for further information.

Diffraction instrument



A new research tool designed to aid in the observation and measurement of surface conditions of metals, ceramics, and plastics has been announced.

Called an electron diffraction instrument, it is valuable in the investigation of problems associated with corrosion, catalysts, lubricants, metallurgy, pigments, surface deposits, and graphite.

It differs from the X-ray diffraction instrument, which analyzes thick specimens, in that the new instrument shows the crystal structure of surface and thin specimens up to 500 Angstrom units, according to a report.

Additional information is available in Bulletin GEA 4905, Special Products Divisions, General Electric Co., Schenectady 5, N. Y.

Equalizing sling

A new level-load lifting sling, known as "Adjust-A-Leg", has been announced. The sling consists of an equalizing unit (with a wire rope inserted) to be placed on the hook of

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a crane.

The equalizing unit is made up of a sheave (with a V-shaped groove) carried by a spring-mounted axle and a pair of brake hooks. The rope,

which lays over the sheave in the groove, has a hook attached to each end, forming two legs.

For further information, contact The Caldwell Company, Rockford, Ill.

New industrial literature

Booklet on wire terminator

A recent booklet describes an automatic wire terminator which is said to assure up to 3,300 perfect, identical, electrical connections per hour.

For further information on the "AMP Automatic Wire Terminator," contact Aircraft-Marine Products, Inc., 1523 North Fourth St., Harrisburg, Penn.

Booklet on a small furnace

A booklet containing construction data on a small electric heat treating and enameling furnace has just been released.

The furnace was designed for heat treatment of small tools, or other small steel parts, as well as for firing small ornamental enamel ware, according to Engineering Publication Number 2, published by Engineering Experiment Station, University of New Hampshire, Durham, N. H.

New enameling dictionary

Words and terms adopted as general usage in the porcelain enameling industry have been compiled and published in "The Enameler's Dictionary."

This reference book of porcelain enameling terminology was released recently by Ferro Enamel Corporation, 4150 East 56th St., Cleveland 5, Ohio.

Booklet on modern bathroom planning

Many helpful suggestions for the planning of bathrooms and powder rooms are offered in "Modern Bathroom Plans," a new booklet published by the Plumbing and Heating Industries Bureau.

A total of 34 plans are shown in the booklet which is said to be the only one devoted exclusively to the

planning and arrangement of bathrooms and powder rooms.

The booklet sells for 10¢ per copy and may be obtained from Plumbing and Heating Industries Bureau, 35 East Wacker Drive, Chicago 1, Illinois.

New edition of "Shot Peening"

Announcement has been made of the release of a new edition of "Shot Peening." This third edition of the book originally published in 1944 contains all information included in the earlier editions plus the addition of comprehensive papers of the subject by J. O. Almen, General Motors Research Laboratories, and O. J. Horger, Timken Roller Bearing Co.

This 181-page book is priced at \$1.50, but will be sent without charge to executives who send in their requests on company letterhead to the publisher, American Wheelabrator & Equipment Corp., Mishawaka, Indiana.

Bulletin on screens

Screens for dry screening, separating, classifying, cleansing, reclaiming, and general dry process work, and for wet sifting or screening of liquids, dewatering operations, etc., are illustrated and described in detail in a new 12-page bulletin.

Further information on "Gyrocentric" screens may be had in the bulletin published by Patterson Foundry and Machine Co., East Liverpool, Ohio.

Catalog on handling parts through production

A new catalog on handling parts through production has been released by a firm which designs and manu-

factures containers and work holders for handling parts through heat treating, quenching, pickling, degreasing, rust-proofing and other processing.

Catalog No. 16 presents more than 60 units such as baskets, trays, fixtures, retorts, carburizing boxes, quenching tanks, furnace parts and special equipment.

Contact Stanwood Corporation, 4319 West Cortland St., Chicago 39, Ill.

"Food Is Fun" cookbook

A 28-page four-color illustrated cookbook, "Food Is Fun," has just been released by the American Gas Association. Designed primarily to promote automatic gas ranges built to "CP" standards, the book contains a variety of cooking tips for the homemaker.

"Food Is Fun" is available at a cost of 10¢ per copy f.o.b., Philadelphia. Orders should be addressed to the Promotion Bureau, American Gas Association, 420 Lexington Avenue, New York 17, N. Y.

Bibliography on protective coatings

The publication of a special bibliography containing a complete list of OTS technical reports and documents on protective coatings for metals has been announced by the Office of Technical Services, Department of Commerce, Washington 25, D. C.

Included in the bibliography are research reports and patent applications from I. G. Farben-industrie in Germany as well as various specifications of the U. S. Bureau of Ordnance and reports on Quartermaster Corps investigations. The report includes information on vitreous enamel coatings on aluminum.

Market research bulletin

"Market Opportunities" is a new bulletin that will be sent to Institute membership periodically by the Porcelain Enamel Institute Commercial Research Committee, of which Floyd C. Woelagle, Carnegie-Illinois Steel Corporation, is chairman.

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149th & Loomis Sts., Harvey, Ill.

Results of PEI market survey

(Continued from Page 21)

chain grocers were questioned about frozen food cabinets. The results showed:

- 83% had frozen food cabinets in their stores
- 45% were over three years old
- 25% showed wear from handling and cleaning
- 7% showed deterioration of cabinet interior
- 78% preferred porcelain enamel

A cross section of restaurant men also were questioned to obtain their opinions about porcelain enamel. Restaurant owners' and managers' preference for porcelain enamel were:

- Outdoor signs.....30%
- Light reflectors.....71%
- Frozen food cabinets.....71%
- Vending machine casings...67%
- Soda fountain counter fronts 67%
- Water coolers.....58%
- Exhaust hoods and protective wall panels.....41%
- Counter stood stands, table bases and table supports..35%
- Building fronts.....31%
- Service counter tops and fronts23%

- Surface of work tables.....12%
- Coffee urn casings..... 6%
- Table tops..... 6%

In other words, 100,000 to 135,000 restaurants preferred porcelain enamel for these applications. Replacement market indicated early prospects for 50,000 restaurant signs, 10,000 building fronts and 4,000,000 square feet of porcelain enameled light reflectors.

In the building field, there were 4,000 architects who preferred porcelain enamel for new, modernization or remodeling projects; 22% of the product designers plan to use porcelain enamel for new products.

From these surveys it was concluded that over 23,000,000 buyers or specifiers are sold on porcelain enamel. Now the task before the industry is to keep them sold, and add new prospects in their early stages of product development and market expansion.

Adapted for finish from a talk before the Porcelain Enamel Institute First Sales and Management Conference.

Lucky markets

(Continued from Page 24)

goods cleanly, quickly and easily from retailer to consumer. The role of porcelain enamel in the process is useful as well as decorative.

Lucky Stores management see frozen foods as feature foods of the future, and they are the first to design a market around this conviction. Frozen foods, including prominently featured ice creams and iced desserts, might be called the stars of the Lucky Market setup in San Leandro, with 346 lineal feet of refrigerated porcelain enameled cabinets devoted to these commodities. This does not include the refrigerated storage cabinets for dairy products, beverages and other perishables. The open display cases are all self-service.

In addition to the equipment, some of the interior and much of the exterior of the market makes architec-

tural use of porcelain enamel, achieving some novel effects. The completed San Leandro market is the model for the "large number" of new Lucky Stores planned for the West Coast, especially in the San Francisco Bay area. (Other Lucky Stores have been completed already in San Bruno and Salinas.)

The architectural design and color harmonies will be standard for all the stores, and all will use porcelain enamel as described for the San Leandro market.

7,200 square feet of architectural porcelain enamel in market and tower

Approximately 7,200 square feet of architectural porcelain enamel is incorporated in the design of market and tower. One exterior wall is of

forest green corrugated porcelain enamel and measures 5' x 110'. Two upper walls above the marquee are faced in pearl grey corrugated porcelain enamel, with one of the walls being 110' in length by 9' high and the other 120' in length by 8' high.

Dominating the structure is a 65' tower, 17' 3" wide and 3' 10" thick. The tower has three openings, each of which is 9' 6" square. These openings are surrounded by a light cove in which neon tubing is set. The tower proper is canary yellow, the openings and light coves a forest green. The yellow porcelain enamel has a semi-mat finish while the green is in high glaze. The base of the tower forms one of the main entrances of the market and over this entrance is the sign "Lucky Stores." The letters of the sign are porcelain enameled, inverted channel type, illuminated from behind.

The tower at the base forming the entrance is 17' 2" x 17' 2" running up 12 feet to the marquee, and is actually a solid looking square block at the corner of the building which fronts two ways. One side opens into the store; the other is a display case 5' x 12' set in a deep bronze frame.

Carrying out the canary yellow of the bulk of the tower, this color also predominates in the entrance exterior, but the recessed portion at base of tower is forest green. Letters forming the store name are yellow.

Porcelain enameled bulkheads

Bulkheads, 18" high, across the front of the store, measuring 120', are finished in forest green porcelain enamel. On the inside of the building, bulkheads in porcelain enamel of the same length are 12" in height in the same shade of green. Interior of the block which forms the corner tower is canary yellow, with the exception of the forest green street front recess. Tower is porcelain enamel inside and out.

The entire building was worked out on a modular system with standard unit measurement for the whole of the porcelain enamel work. The bulk of the porcelain enamel construction utilizes 18" square panels with application on both wood sheeting and

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Our Field Engineers, at central points, plus a well-staffed and equipped laboratory can render valuable cooperation on ceramic problems of all types.

For optimum results, we would recommend the use of a TAM opacifier best suited for the type of frit being used

Antimony opacified regular frits: — Treopax, Hyopax, Treopax S

Antimony opacified A. R. frits: — Opax, Treopax, Treopax S

Zirconia opacified frits: — Treopax Z, Treopax, Treopax S

TiO₂ opacified frits: — Treopax Z, Treopax

C. I. Enamels: — Opax

TAM vitreous enamel mill addition opacifiers OPAX, HYOPAX, TREOPAX, TREOPAX S and Z assure economical and uniformly excellent porcelain enamel opacification. TAM Zirconium Oxide Opacifiers increase elasticity of an enamel and reduce chipping tendency.

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reinforced concrete into which nailing strips were let.

Color harmonies were set up by Mr. Loewy and carried through the whole of the exterior and interior, tying together the various materials used with the display cases to form an integrated whole.

The 5' high block letters, edge-lighted with neon across the top of

the tower, are also of porcelain enamel. All the porcelain enameled panels were manufactured and installed by Architectural Porcelain Constructors, Oakland, Calif., of which Frank Allen is president and his brother, Ray, is in charge of construction. The enamel application was by Payne-Mahoney Co., also of Oakland.

The business outlook for 1948

(Continued from Page 26)

export balance; (d) higher interest rates; (e) filling up of the business and consumer pipe line with inventories. . . . Most of the experts were in agreement that after a short period of correction or readjustment, employment, income and production would again rise under the stimulus of backlogs in the automotive, steel

and other durable goods industries, and the mass markets which can again be tapped once prices are stabilized, were emphasized as strong recovery factors in this connection.

Brief of a talk before the Fifteenth Annual Convention of the Institute of Cooking and Heating Appliance Manufacturers.

You need "sales insurance" for your business

(Continued from Page 31)

3. Educating Distribution Outlets

Since an adequate knowledge of porcelain enamel — what it is and its advantages in service — is so important in maintaining and expanding markets for porcelain enamel, our Market Development activities have always provided an educational program including: advertisements in retailing magazines, advertising folders, labels, counter display cards, window display cards, sales data pages, etc. (A recent survey of one month's ads showed 7,434 retailers featuring porcelain enamel in their ads.)

4. Developing Business Leads

There are two types of business leads — short range and long range. While our efforts have brought in many of the short-range type, our principal objective was the long-range type. And a great many of these have developed.

As a means of drawing these long-range inquiries and make the most of them, we first provided two basic pieces of literature:

1. A general sales brochure
2. A design engineering handbook.

5. Creating New Applications

From inquiries that come to P.E.I.

headquarters, and suggestions that come from members, the Managing Director selects those which offer greatest long-range promise.

Then, drawing on the counsel and cooperation of member companies, he works with one or more manufacturers of each product under consideration, to help them adapt porcelain enamel where other materials had been used.

This is difficult and tedious work, requiring an engineering background and much ingenuity. But it is the kind of effort that yields important long-range values that benefit the whole industry.

6. Informing Every Possible

Business Influence

As a backdrop for all other phases of Market Development, a program of general publicity broadcasts the story of porcelain enamel, the growth and progress of the industry, and newsworthy activities of member companies.

During the month of August, for example, twenty-one different news releases reported current Institute activities and industry developments to:

1. Women's editors and business editors of 150 to 200 of the coun-

try's leading newspapers, reaching about 23,000,000 readers.

2. 300 trade-paper editors servicing 25 different industries and having a combined circulation of 5½ million.

3. Leading news services, radio stations and selected lists of home service magazines — the combined circulation of which we cannot possibly estimate.

7. Helping Individual

Manufacturers

By personal consultation with the Managing Director and members of the Market Development Committee, individual manufacturers are given these types of marketing aid:

1. Advice on how to take fullest advantage of the P.E.I. Market Development Program.
2. Assistance in improving their own company's marketing efforts and in dovetailing these efforts with the general program.
3. Copywriting assistance in featuring their use of porcelain enamel most effectively.

8. Creating Greater Prestige for All

While its benefits may not be as evident as other activities described, there is another and important phase of the Institute's Sales Insurance program. It is the prestige created for the Institute and for all manufacturers identifying themselves with the P.E.I. or the material it represents.

Today the Porcelain Enamel Institute is widely known and accepted as a constructive force. It is known as the recognized focal point of the porcelain enameling industry. It is known as an organization that fosters increasingly better quality of product. And it is known as the guardian of users by its established standards of quality.

Individual manufacturers share in this prestige:

1. When they show the P.E.I. emblem of quality.
2. When they distribute literature bearing the Institute name.
3. When they conform to Institute quality standards and so identify their work.
4. When they identify themselves



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↑
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GOES
PRODUCTION

DOWN
↓ ↓
COMES COST

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CHICAGO VITREOUS ENAMEL PRODUCT COMPANY
exclusive representative for the enameling industry

with the Institute by showing the membership insignia on letterheads and in advertising matter.

Are you covered?

In this brief discussion I have carried through the analogy of insurance because I firmly believe that the most important task facing business today is to protect its investment against the era of competitive selling that always follows a prolonged period of high level demand.

Of course, I think it will help your business individually to support the collective effort of the Porcelain Enamel Institute.

Of course, I think an individual manufacturer should take every possible advantage of the various sales aids afforded by this collective program.

Of course, I think you should also have a well considered program of your own, dovetailed as closely as possible with that of the group.

But it goes much deeper than that.

It gets right down to the basic attitude of management toward the

selling end of business.

It is a well-known fact that 75% of top management in business today came up from the ranks of production—which means that they can't help favoring production in the way they think and act.

Add to this the fact that we have had an unbroken period of seven years in which demand has exceeded supply, with material shortages and recurrent labor difficulties serving to further emphasize the importance of production.

This is the real foundation of the difficulties some of us will face when the trade winds shift. So whether you are covered at that time with adequate market insurance or smothered in the avalanche of competition, depends in large degree upon the attitude you take now toward the selling end of your business.

A seller's heaven sometimes turns out to be a fool's paradise.

Adapted for finish from a talk before the Sales and Management Conference

Industrial literature

→ from Page 62

The bulletin will give, in brief high light form, statistical information and current trends pertaining to industries and markets that are important consumers of porcelain enameled products. New applications for porcelain enamel will be described and discussed and market opportunities for new and old products pointed out.

Volume of gas facts

Valuable factual data, covering the gas utility industry, has been assembled for the first time in a 176-page volume, "Gas Facts," just published by the Bureau of Statistics, American Gas Association.

This new book, a comprehensive statistical record of the gas utility industry in the United States for 1945 and 1946, is the first in a new series of annual statistical year books which will be published by the Association.

Copies of "Gas Facts" have been distributed to gas company members of the Association. Additional copies are available to them and others at \$1.00 per copy from the Bureau of Statistics, American Gas Association, 420 Lexington Ave., New York 17.

NEWS → from Page 58

been elected chairman of the Manufacturing Trade Group of the National Industrial Council, an affiliate of the National Association of Manufacturers.

As chairman of one of three groups comprising the Council, Beale succeeds George Romney, manager of the American Automobile Manufacturers Association.

Sign convention in Chicago January 19-21

The second annual Convention and Equipment Exhibit of the National Electric Sign Association will be held at the Stevens Hotel, Chicago, January 19-21.

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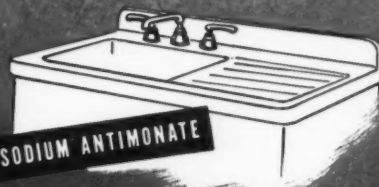
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Fifteenth annual meeting of cooking and heating appliance manufacturers

(Continued from Page 41)

products are still at a low level, and backlogs of unfilled orders approximate six months' production on cooking appliances, and nine or ten months' production on heating appliances.

The Taft-Hartley law

In his discussion of the Taft-Hartley law, J. Loren Freund stressed the fact that as the law was written its operation was partially delayed, and stated that the Board has had no opportunity to make any decisions other than those concerning the law's administrative requirement for the filing of non-Communist affidavits.

"The period of the operation of the law in the last five months has been devoted to a study of its terms and more particularly to certain developments that have reversed trends of the past 14 years," Mr. Freund stated. "Already a new vocabulary of labor terms has sprung up to stimulate management's thinking—bootleg contracts, counter-demands, decertification, last offer elections and similar phrases have already begun to be significant terms under the Taft-Hartley law."

In concluding his talk, Mr. Freund emphasized the revelations of recent polls, that employees on the whole are in ignorance of any of the actual provisions of this law, which by its very form will place much greater power in the hands of the individual employee. Management's job is to make available information concerning the Taft-Hartley law in a fair, frank and impartial manner.

The business outlook

In his talk, "The Business Outlook for 1948," Martin R. Gainsbrugh voiced the opinion of leading economists that business activity would rise to new heights in 1948, but outlined some of the difficulties which may be encountered by business leaders during the coming year as a result of increased inflation pressures. It is indicated that wages and other costs may continue to rise but

unit production is not keeping step.

The industrial designer

Ralph Kruck, industrial designer from Clinton, Connecticut, gave specific mention of the importance of porcelain enamel as a finish for range and other industry products. He said, "The direction or trend in range design indicates the need for

Chicago district enamellers December meeting

(Continued from Page 35)

systematic approach to the adaptation of a material or product to new uses."

"In porcelain enamels we have a material of long standing, but in recent years," said Dr. Andrews, "its properties, its methods of manufacture, its composition, and its application have undergone many changes. This change has crept up on the enameLER without his really becoming aware of its many new possibilities.

"The fact that enamels can now be applied in thinner and thinner coatings opens the possibility for a great expansion in its field of usefulness. We are obsessed by the criticism that it might fracture both by mechanical abuse and spontaneously. The later cause has almost entirely disappeared with thin coatings and the former has become very much less common.

"Compositions of enamels have changed radically, resulting in greatly increased covering power and chemical durability. Color is under better control and the permanence of the material in all respects remains now, even more than in the past, one of its outstanding values.

"New methods of manufacture, better design, special compositions for different purposes, and a greater understanding of the processing are already here.

"Special improved metal sheets are ready for production as soon as the steel situation eases and many new improved processes are being tried out in laboratories and in plant production.

"It is therefore time that the por-

celain enameLER again evaluate his product and apply a systematic study to the application of this improved coating to the many places where the market is awaiting him."

With the aid of charts, Dr. Andrews outlined some of the inherent properties of porcelain enamel which he said should be considered when expansion into other markets is considered.

Some of the properties, he said, are *chemical* (weather, water, acids, alkalis, salts, gases, chemicals, pharmaceuticals, foods, permeability, stability), *electrical* (resistance, dielectric, magnetic, power factor, capacitance, stability), *mechanical* (hardness, strength, elasticity, brittleness, abrasion, scratch, stability), *optical* (reflectance, covering power, gloss, color, transparency, ultra violet, infra red, fluorescence, photo sensitive, dispersion, stability), *thermal* (combustibility, high temperature, heat shock, h. t. properties, conductivity, infra red, stability).

The speaker then outlined the different fields in which porcelain enameled products could expand. These included agricultural, aviation, automobile, factory, highways, homes, hospitals, marine, railroad, stores, storage, and such industries as food, chemical, pharmaceutical, soap, petroleum, photographic, fishing, and paper.

Another approach, said Dr. Andrews, is that of taking one or more important properties and inquiring into its probable advantage in dif-

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TRY CENTURY FRITS for 1948



THE Century trademark has stood for the best in quality porcelain enamel frits since the first Century frits were produced in 1935. Two of the reasons behind this record are the experience of the men who make the frit and the modern equipment with which they work.

Millions and millions of pounds of Century time-proved frits have been used by many of the nation's largest and most modern porcelain enameling plants. And, the best proof of complete satisfaction is the fact that these same companies continue to use Century frits year after year.

All Century frits are time-proved in plant operation before they are sold. Whether it is a sure-bond ground

coat, a special enamel for signs or the latest in Titanium frits the Century trade mark means satisfaction.

If you are not a Century customer now select 1948 as the year to try these time-proved enamels.



CENTURY VITREOUS ENAMEL COMPANY, 6641-61 S. Narragansett Ave., Chicago 38, Ill.

finish JANUARY • 1948